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AVIATION SAFETY FROM COVER TO COVER

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FEATURES

DEPARTMENTS

FRONT COVER: 1981 Piper ARCHER II.

Winner of the National Flight Standards Service Excellence in Public Awareness Award

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OPERATIONS AT NONTOWERED AIRPORTS

AVOIDING DISASTER Part 4

Defining the pilot's role in collision avoidance

by Phyllis-Anne Duncan

FAR § 91.113(b) requires the pilot to "see and avoid" other aircraft, to wit:

"When weather conditions permit, regardless of whether an operation is conducted under instrument flight rules or visual flight rules, vigilance shall be maintained by each person operating an aircraft so as to see and avoid other aircraft."

It seems cut and dried, but what if you're in a radar environment, squawking and obvious to a controller who gives you traffic advisories? What if you have TCAS to give you climb or dive instructions? No change. You, the pilot, must continue to see and avoid.

In some ways this is the most fundamental of all our piloting and safety responsibilities. Avoidance may be the easy part; seeing may be a little more difficult. After all, it is not so easy as simply staring out the windscreen for any flying object to cross your path. You have to know where to look and what you're looking for; then, in a brief amount of time assess the situation and determine the best course of action to avoid the tragic occurrence of two aircraft attempting to defy physical laws and occupy the same airspace at the same time.

This is the last of a series of articles on operations at nontowered airports, a series which was initiated in light of a collision between an air carrier aircraft and a general aviation aircraft at the nontowered airport in Quincy, IL. Whereas the National Transportation Safety Board (NTSB) has not yet reached its conclusion as to the probable cause of the accident, its circumstances were sufficient to publish reminders of our pilot-in-command responsibilities concerning collision avoidance.

Part 1 (in the January/February 1997 issue) was an overview and contained some general safety information; Part 2 (March 1997) dealt with recommended standard traffic patterns at nontowered airports; Part 3 (April 1997) covered radio advisory practices at nontowered airports; and finally here we will discuss what pilots can do to see and avoid and, thus, faithfully execute their roles in collision avoidance.

If you missed any part of this series, please contact us at the phone number or address on the inside front cover or e-mail the Editor at Phyllis.Duncan@faa.dot.gov . Provide your address, and we'll send you the missing parts. Our supplies of back issues are limited, but we will be issuing the series of four articles as an *FAA Aviation News* reprint later this year. You will be able to obtain that from the Safety Program Manager (SPM) at your local FAA flight standards district office. Your SPM also has available now a safety seminar on collision avoidance which the FAA purchased from the Aircraft Owners and Pilots Association Air Safety Foundation. This is an excellent presentation, so please check with your SPM to see when he or she has scheduled "Collision Avoidance" for an upcoming seminar.

So much for the plugs for FAA safety programs. (Well, we have to.) Now, let's talk about our role in collision avoidance. Some of what we'll cover in this article is designed for traffic avoidance at altitude but is directly applicable for operations at nontowered airports.

MAC and NMAC

The very words "mid-air collision" (MAC) are sufficiently disturbing to any pilot, and perhaps we tend to think that MAC happen to the "other pilot." After all, your scan is good and well-practiced. Why wouldn't any other pilot's not be as good? In reality even the most vigilant pilot gets distracted—by a passenger's question, a wonderful piece of scenery, an inflight emergency. That's why distractions are taught during primary training and tested during the practical test. However, we shouldn't give over any of our responsibility to the "other pilot" and not assume that because we look out the window the other pilot is also. Pilots may have to adapt the highway safety theme of defensive driving—"Watch out for the other guy!"

The "see and avoid" concept involves a bit more complexity than the quote above from the FAR that "vigilance shall be maintained at all times." According to advisory circular 90-48C, "Pilots' Role in Collision Avoidance," seeing and avoiding requires situational awareness, expecting the unexpected, and the commitment to doing what has to be done to avoid a collision. In the air while closing on each other at a significant rate is no place to assume that the "other pilot" will alter course. Since most MAC and near mid-air collisions (NMAC) occur in VFR weather and in daylight, we have nothing to "hide" behind in assuming our role in collision avoidance.

SOMETIMES YOU JUST HAVE TO WAIT YOUR TURN

That is the conclusion of an article entitled, "Dangerous Practices Becoming Common at Uncontrolled Aerodromes," printed the 2/97 issue of the *Aviation Safety Letter* of Transport Canada. Since what is described in the article fits in with our "operations at nontowered airports" series, please read on.

"Few small aerodromes benefit from the luxury of parallel taxiways or holding bays near the runway threshold. They are one-runway operations. Arriving and departing aircraft have to sequence themselves properly to avoid conflict. It can be particularly annoying when the parking area is at the far end and a long taxi is involved before a pilot can get into position to safely do a run-up and depart. Some pilots have to wait to taxi, or others have to wait to land.

"As a result, in the interest of expediting traffic, pilots are developing dangerous habits, habits that are not only being accepted but also, on occasion, being taught by instructors.

"Pilots create their own parallel taxiways, in the grass, just off the runway. These are being used while other aircraft are arriving and departing. Aerodrome standards require that parallel taxiways be far enough from the runway to guarantee wingtip clearance plus a big safety margin. This means several hundred feet away, not just off the runway surface on the nicely graded and prepared area....

"By mutual arrangement some pilots are landing over top of other aircraft, some are backtracking, and others are waiting for takeoff on the threshold.

"Last, but not least, parallel takeoff/landing operations occur, with some pilots using the runway while others use the adjacent grass. The runway user conform to the recommended left-hand circuit pattern; the grass users do both left- and right-hand circuits.

"These are very dangerous practices. Picture a sunny weekend when everybody wants to fly. Picture a couple of arriving and departing transient pilots who don't know the local habits. Picture a collision.

"Sometimes you just have to wait your turn."

Visual Scanning and the Limitations of the Eye

Countless hours of philosophical debate have occurred on the nature of reality. If I see something is it real or is it just my visual perception? In aviation, our debate is not so esoteric. Several hundred pounds of metal and plastic in a close encounter is real no matter which side of the philosophical argument you come down on.

As humans we take in most of our information—over 80% according to some studies—visually. In flight, we use our eyes to read and interpret instruments, maintain level flight, and see obstructions. The simple reality is that you can avoid what you can see, but you have to look for it. The "head on a swivel" image is one that flight instructors emphasize constantly to primary students, and, though physically impossible, it is a concept that should continue throughout our aviation careers. Our heads may not swivel so easily (horror movies aside), but our head and eyes can move—from side to side, up and down—and our torsos can turn and move as well.

We have to understand somewhat the limitations of the eye; after all, I said 80% above, not 100%. Our eyes are physically vulnerable to anything our bodies are: fatigue, disease, age, illusions, alcohol, drugs, stress, even the odd, dislodged eyelash. Even though our eyes may be working perfectly, outside conditions can affect our vision—distortions from the windshield, haze in the atmosphere, too much or too little oxygen, glare, lightning, etc.

The mind also affects what the eyes see; i.e., we can see or recognize only that which the mind has reference for. Even familiar objects can be unrecognized by the pilot whose mind is somewhere else—daydreaming or thinking about the business deal about to be closed.

AC 90-48C stresses constant alertness "to all traffic movement within [the] field of vision, as well as periodically scanning the entire visual field." That visual field expands as we move our heads and look—carefully—outside the aircraft. Of course, expanding the visual field means we have to establish a quality visual scan. A visual scan is most effective when it consists of short, regularly spaced eye movements that do not exceed 10 degrees at a time. Each 10-degree "block" should be observed for at least one second.

One of the biggest limitations of the eye is the time it needs to refocus or accommodate. That accommodation is automatic, but changing from something fairly close-up (the instrument panel) to an object a mile or more away, takes a second or two, particularly if your eyes are not up to par. One or two seconds seems like a short time, but it has been estimated that to see, identify, calculate the evasive action required to avoid a mid-air collision, and then take that action could take 10 to 12 seconds.

Objects seen "out of the corner of the eye" should not be ignored. True, they usually end up being nicks in the Plexiglas or bug smears, but they still warrant checking out. When you move your eyes to a new spot and refocus, your peripheral vision compensates while that refocussing occurs, and movement is more often perceived under some conditions by peripheral vision than head-on. Spotting objects at night depends almost entirely on your peripheral vision, and pilots are advised not to look directly at an object to determine relative motion but rather slightly to one side of it.

Day or night, if you see an aircraft ahead of you and it appears to have no motion relative to you, you are on a collision course. If the aircraft has no vertical or lateral motion but appears to grow in size, evasive action is required—NOW!

How and Where to Scan

Your scan should be consistent and standardized and should always include dropping your eyes down to scan the instrument panel. Some pilots find it comfortable to start in the middle of the visual field, scan in 10° "blocks" left, drop down and scan the panel from left to right, then scan the remainder of the visual field blocks from the right back to center.

Others start left, move across the entire visual field, then scan the panel from right to left before returning to the visual field at the left. The point is to develop your own personal scan around these parameters—whatever is comfortable and works for you.

Generally, scanning an area 60° to the right and left of the center visual area covers most of the sky, especially if you scan 10° up and down as well.

Your scan may have to change for the type of aircraft that you fly, and you'll need to program your "evasive action" trigger to go off a little quicker when you are operating a high-performance or high-speed aircraft. In a slower airplane you are exposed to the collision hazard longer.

Many pilots may neglect their scans once entering the traffic pattern, being busy with communicating location through the pattern and prelanding checklists. But continuing a visual scan for traffic may be the most important part of the traffic pattern procedures at nontowered airports, since some pilots do not make the recommended standard traffic patterns a habit.

Clearing the Air

Clearing turns are also an important part of our role in seeing and avoiding other aircraft. Surrounded by solid fuselage, we have to move ourselves and the aircraft to see areas of the visual field that are hidden from our scans. Before takeoff at any airport, but particularly at nontowered airports, position your aircraft on the taxiway so that you can scan the entire approach area before taxiing onto the runway for takeoff.

Of course, we're all familiar with "clearing turns" done at altitude before performing maneuvers that block the visual field; i.e., stalls, flight at minimum controllable airspeed. The question arises, how often to perform clearing turns. Sometimes, instructors, mindful of the time they want to

OTHER LIMITATIONS OF THE EYE

Empty Field Myopia

At high altitude or at low altitude on overcast or hazy days, the eye may not have any distinct object to focus on, so it doesn't focus. This is called empty field myopia, and the result is we stare and stare and see nothing. The only way to counter this is to find something to focus on—a wisp of cloud, even that smashed bug on the windshield.

Binocular Vision

Because we have two eyes side by side and facing forward, we actually have two visual fields. Look at an object with both eyes, then alternate closing first one eye, then the other. The object appears to move. That's because we're "switching" between two visual fields. With both eyes open, our brain compensates and merges the two fields so we see a single representation. If a doorpost or lowered sun visor blocks one eye's visual field we are reducing what we can see. Again, move your head and restore your full visual field.

Narrow Field of Vision

Our eyes take in light in an arc of about 200° but our favored field of vision is much narrower—10° to 15°. Within this narrow field of vision is where we focus then classify objects. We can perceive movement in our peripheral vision, but we tend not to believe what we see there. When we "trust" only that narrow field of vision, we are said to have "tunnel vision."

Limited Vision

Limited visibility may mean clouds, haze, or fog restricting visibility, but it also means limited vision as well. In such a situation, you must be particularly vigilant and prepared to take immediate action to avoid an airplane suddenly emerging from the haze.

Lightning and Glare

Lightning and glare can "over-saturate" our field of vision and can make scanning uncomfortable. Lightning can leave behind that floating ball—similar to what you get from a camera flash—and effectively block out a whole section of your field of vision for a long time. Contending with glare can be painful and tiring, but the use of glare-blocking sunglasses may also filter out your ability to see other aircraft.

Cluttered Background

Here on the east coast the level of development is so extensive that obtaining contrast between the ground and an object in the air below you is very difficult. Even a brightly colored airplane can blend into the background, but you must be especially careful for camouflaged, military aircraft when you do fly in rural areas.

Cockpit Myopia

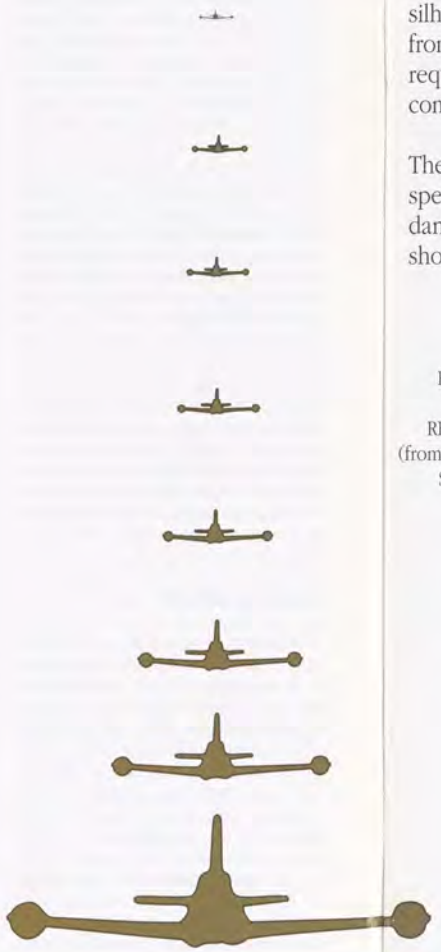
Fatigue and stress have a tendency to make us focus on a single thing, usually one instrument inside the cockpit. After you stare at it long enough, you see little else, and you certainly don't see anything outside the airplane. That is why it is important to continue your visual scan of your instruments and for traffic even when you are dealing with an emergency.

Smoking

The eye needs oxygen to work properly, and tests have shown that smoking elevates the levels of CO in the blood. Thus, the eye's ability to see anything is reduced.

DISTANCE - SPEED - TIME

MPH ▶	600	360
	SECONDS	
10 miles	60	100
6 miles	36	60
5 miles	30	50
4 miles	24	40
3 miles	18	30
2 miles	12	20
1 mile	6	10
0.5 mile	3	5



CRITICAL SECONDS

Move back 12 feet from this illustration. From that position the silhouettes represent a T-33 aircraft as it would appear to you from the distances indicated in the table on the left. The time required to cover these distances is given in seconds for combined speeds of 360 and 600 mph.

The blocks on the lower left mark the danger area for the speeds quoted, when aircraft are on a collision course. This danger area is based on the recognition and reaction times shown in the table on the lower right.

RECOGNITION and REACTION TIMES (from U.S. Naval Aviation Safety Bulletin)

Excerpt

	Seconds
see object	0.1
recognize a/c	1.0
become aware of collision course	5.0
decision to turn left or right	4.0
muscular reaction	0.4
aircraft lag time	2.0
TOTAL	12.5

spend actually teaching, tell students to perform one set of clearing turns right and left over the practice area and no more. Traffic is dynamic, and an area clear a few seconds before may become occupied. AC 90-48C suggests clearing turns "at a frequency which permits continuous visual scanning of the airspace," but that still leaves a lot to be guessed at. Every couple of minutes is probably ideal, and remember that if you move your head and look around doorposts, etc., the clearing turns may not have to be full 180's.

Instructors, Examiners, Safety Pilots, and Passengers

Some of the best teaching an instructor can provide a student is by example. If a student observes his or her instructor consistently practicing a thorough scan for traffic, the student is bound to develop that good habit as well. A flight instructor who talks about the importance of scanning for traffic while doing it is gilding the lily.

The same holds true for examiners. Their purpose, of course, is to test the pilot applicant, but they are also a second set of eyes during the flight. Not only do they observe the pilot's scan and assess it, they must practice it as well. However, both flight instructors and examiners have to be careful about becoming so preoccupied with instructing or testing that they "go inside" too often or too long.

A safety pilot's primary job, particularly during simulated instrument flight, is to do what the pilot can't—look outside. Even if you're a second pilot flying with a pilot friend, two scanners are always better than one. So, do you split the scanning duties; i.e., "I'll take the right side—you take the left," or do you overlap the scans? The latter is probably better; one of you might catch something the other missed.

Passengers, too, should be "trained" to scan. Put them to work. Again, that extra pair of eyes may come in handy just when you need it.

Conclusion

Probably the most telling picture I've ever seen is the two-page illustration we have provided on pages 4 and 5, which graphically (no pun intended) illustrates how a tiny, obscure speck on the windshield can blossom to a full-grown airplane in seconds. They can be the most awful few seconds of your life, and they mustn't be the last.

They don't have to be at nontowered airports if we use standard traffic patterns, communicate our position with advisories, and visually scan the airspace we share with others.

That's our role in midair collision avoidance.

This article is based in part on AC 90-48C, "Pilots' Role in Collision Avoidance," and former Accident Prevention Program Safety Pamphlet, FAA-P-8740-51, "How to Avoid a Midair Collision."

COLLISION AVOIDANCE CHECKLIST

1. **Check yourself.**
2. **Plan ahead.**
3. **Clean your windows.**
4. **Adhere to SOP.**
5. **Avoid crowds.**
6. **Compensate for design.**
7. **Equip for safety.**
8. **Talk and listen.**
9. **SCAN!**

Check yourself. Are you ready to fly and physically fit to be able to see and avoid? Your mental and physical condition affect your eyesight.

Plan ahead. Fold your charts in sequence before you get in the cockpit and keep them within reach. This saves you precious inside time searching, selecting, checking, and folding while trying to fly and scan for traffic. Refresh yourself on headings, frequencies, distances, and so on before flight. Write them down in a flight log and also have them handy before flight.

Clean the windows. "I don't do windows!" doesn't cut it in collision avoidance. If your windshield is a field of smashed bugs, they not only can "hide" an airplane, you become inured to the specks and may not heed the one that you spot peripherally; it may be an airplane and not some unfortunate arthropod. Keep sun visors and curtains out of the way .

Adhere to SOP. The use of position reporting and standard traffic patterns cannot be emphasized enough; that's why we keep harping on them.

Avoid crowds. This is a little hard to do at a busy airport, nontowered or towered. Enroute, avoid flying directly over a VOR and overfly airports at a safe altitude, paying special attention when you are within 25 miles of military airports or busy civilian ones. Military airports have high concentrations of fast jet traffic, and their traffic patterns can extend up to 2,500 feet. (Refer to pages 4 and 5 for an example of closure rates.)

Compensate for design. Know your aircraft's blind spots, particularly those associated with high-wing and low-wing aircraft during turns. Final approach at non-towered airports has provided one of the most dangerous situations in aviation: the faster, low-wing airplane overtaking and descending on top of a slower, high-wing airplane.

Equip for safety. Systems which were formally too expensive for aircraft are now within a pilot's economic grasp. High intensity lighting, hand-held transceivers, etc., can cost less than $200 apiece. The lights increase your contrast and visibility to others, and the radios allow you to communicate your position and hear others'. Headsets, now also inexpensive, allow you to hear better, and push-to-talk switches allow you to communicate without reaching for a mike.

Talk and listen. Eyes and ears used together can improve upon the 80% information that eyes-only provide. Listening to another pilot's position reports allows you to visualize his or her position in relation to you, especially in a busy nontowered airport traffic pattern.

SCAN! Look ahead to where you're going to be and make sure there are no other airplanes there. Scan constantly and consistently. Minimize your inside-the-cockpit time. A good scan, like a good pilot, requires training. Teach your eyes to reveal not only the beauty and excitement of flight but also obstructions and other traffic.

OUT WITH THE OLD AND IN WITH THE NEW

FAR Part 143 is gone, but FAA revises FAR Parts 61 and 141 for the 21st Century

by John Lynch

After what seemed like an eternity of write and rewrite, a major revision to FAR Part 61, "Certification: Pilots and Flight Instructors,"—"new" FAR Part 61, "Pilot, Flight Instructor, and Pilot School Certification Rules"—was issued on April 4, 1997.

This final rule, effective on August 4, 1997, amends the FAR governing pilot and flight instructor initial and recurrent training and the operations of FAA certificated pilot schools. The new rules address concerns that were identified during public hearings and comments received from the public in response to a Notice of Proposed Rulemaking. The final rule also updates standards of pilot and flight instructor performance and responds to technological advances in pilot training since the initial adoption of FAR Parts 61, 141 (Pilot Schools), and 143 (Ground Instructors).

During this rewrite of FAR Parts 61, 141, and 143, the FAA has made a major effort to clarify existing rules, has made numerous editorial and reformatting changes to the existing rules, and, where needed, has deleted rules that the FAA considers obsolete, burdensome, or unnecessary. This rewrite has maintained those pilot, instructor, and school certification rules that the FAA considers safety-essential.

The full text of the revisions is so enormous, and the specifics could take up a whole issue of *FAA Aviation News*, so I've elected to summarize here the 30 or so major revisions and/or withdrawn proposals. Information on how to obtain a copy of the full rule is found in the sidebar on page 11.

SUMMARY OF REVISIONS, WITHDRAWALS

The revised rule clarifies such terms as pilot in command time, cross country time, flight training, ground training, training time, authorized instructor, examiner, pilot time, practical test, etc., that have been the source of various interpretations—many incorrect.

The issuance of an additional category, class, instrument, or instructor rating onto an existing U.S. pilot or instructor certificate for foreign pilots outside the U.S. is now permitted so that U.S. schools can increase their business opportunities internationally.

Revised FAR Part 61 now restricts holders of foreign pilot certificates to apply for and only be issued a U.S. private pilot certificate with the appropriate ratings when the application is based on the foreign pilot certificate.

The revised rule replaces the special purpose flight certificate for foreign pilots of U.S.-registered aircraft with a special purpose flight authorization that will be issued by a FSDO. This will lower administrative costs for the FAA and simplify the procedures for foreign pilots seeking special purpose flight authorizations.

The FAR will specify general areas of operation to be covered in training and on practical tests for all pilot and instructor certification so that they parallel the Practical Test Standards (PTS).

Solo flight time (hours) required for the private and recreational pilot certificates have been modified so that the student and the flight instructor can tailor the training time toward the student's needs and capabilities.

Current references to "written tests" have been changed to "knowledge tests" in order to include computer testing and be consistent.

A logbook endorsement from an instructor is now required for eligibility to take knowledge tests. This will eliminate the need for a FSDO to review an applicant's home study program and place more responsibility on the CFI.

Knowledge of windshear avoidance procedures is now required for all certificate levels and an instrument rating.

Aeronautical decision making and judgement training have been incorporated into training requirements for all certificate levels and ratings.

A dual training requirement has been established by aircraft class for night cross-country at the private and commercial pilot certificate levels for powered aircraft.

Private pilots may now perform search and location operations for law enforcement agencies and organizations such as the Civil Air Patrol and be reimbursed for certain expenses without conflicting with limitations of the private pilot's privileges forbidding private pilots from receiving compensation or hire. For years this privilege has been accommodated through the exemption process and now petitioners will no longer be required to submit and the FAA will no longer be required to process exemptions on this issue.

Private pilots may log PIC time for towing gliders. The existing rule has been an unnecessary burden on the pilot in that the time accumulated was considered "compensation."

A commercial pilot applicant must now hold a private pilot certificate before applying for a commercial pilot certificate. This is a minor revision, but it will align the rules of FAR Part 61 with a "step-by-step building block" approach toward pilot and instructor certification. This will save applicants from having to receive some training and testing that is received and performed at the private pilot certificate level and then again repeating it at the

commercial pilot certificate level.

Turbojet flight training is permitted in lieu of the current requirement of flight training in an airplane with retractable landing gear, flaps, and a controllable pitch propeller. The existing rules prevent the use of a turbojet airplane to substitute for a complex airplane, and in this rewrite there has been a concentrated effort to delete obsolete rules.

At both the private and commercial pilot certification, two new dual cross-country training flight requirements have been added. One is for a day-VFR and one is for a night-VFR cross-country flight. Both must be in the class of aircraft for which the rating is sought. These provisions are added in response to industry recommendations on what skills a pilot should have to operate safely in today's National Airspace System.

The NPRM proposed creating new flight instructor ratings for airships, balloons, powered-lift, glider-powered and non-powered, instrument-airship, and instrument powered-lift. In response to the commenters, the final rule is only going forward with the proposal for establishing a CFI and CFII for the new category of aircraft named powered-lift. The FAA has withdrawn the proposals for the flight instructor for airship, balloon, glider-powered and non-powered, and instrument-airship.

The NPRM had proposed to require instructors providing training for any FAR Part 61 airman certificate to use a written syllabus. In response to the commenters, the FAA has withdrawn this proposal.

The revised rule adds another method for qualifying flight instructors who give training to initial CFI applicants in FAA-approved courses. The existing rule required CFI's, who teach CFI applicants, to hold their certificates for 24 months and to have given at least 200 hours of instruction. Under the new rule, if an instructor is instructing in a FAR Part 141 school and has given at least 400 hours (for powered aircraft and lower hour requirements for airships, gliders, and balloons), that instructor will not have to wait for the entire 24 months.

The revised rule codifies FAA policy concerning the renewal criteria for flight instructors. In addition, it adds a provision for allowing a "90-day window" for flight instructors to renew their certificates and to be considered to have renewed in the month due.

The NPRM had proposed to modify the section addressing conversion to current flight instructor certificates to include new non-powered glider, powered glider, powered-lift, airship, and balloon flight instructor certificates. In response to the commenters, the final rule is only going forward with the proposal for establishing a CFI and CFII for the new category of aircraft named the powered-lift. We have withdrawn the proposals for the flight instructor for airship, balloon, glider-powered and glider-nonpowered, and instrument-airship.

FAR Part 143, "Ground Instructors," has been removed. Ground instructor certification has been incorporated into FAR Part 61 in the new Subpart I, "Ground Instructors." Although the NPRM had proposed to revise and to establish new ratings for the ground instructor certificate, the proposal has been withdrawn and the existing ratings (i.e., basic, advanced, and instrument) will remain.

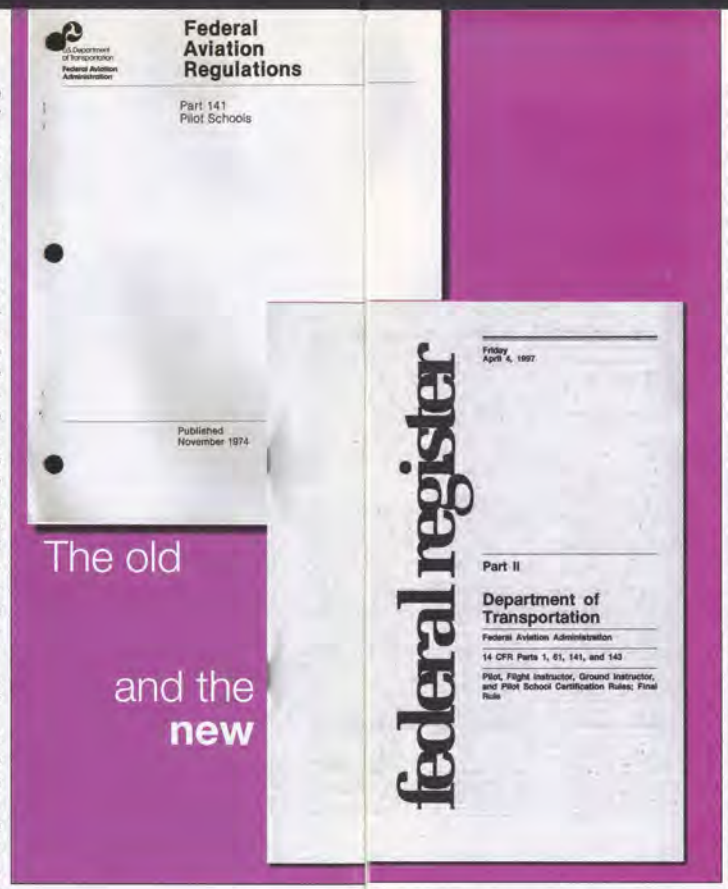
The NPRM had proposed that a holder of a flight instructor certificate would not be eligible for a ground instructor certificate in the same category aircraft. Although this proposal would have saved the FAA some administrative costs and also saved flight instructors from obtaining a ground instructor certificate for which they receive no additional privileges for having, the proposal has been withdrawn.

The NPRM had proposed to require ground instructors to submit to a practical test. In response to the commenters and after further review, the FAA has withdrawn this proposal.

The entire FAR Part 141, "Pilot Schools," has been restructured and reformatted. Although at first glance, it appears the changes are major in scope, this is not the case. Most of the provisions that now exist in FAR Part 141 remain. The revisions will make FAR Part 141 more user friendly and parallel the pilot and instructor certification structure and format of FAR Part 61.

A major change in FAR Part 141 will permit FAR Part 141 schools to receive approval for courses with planned ground and flight training time requirements, in lieu of the minimum time requirements. This change will save the FAA administrative costs and save the industry the costs of obtaining this privilege through the exemption process as has been permitted since the early 1980's. Eight schools that had this "training to a standard" privilege were required every two years to petition for it.

A new position call "check instructors" have been established in FAR Part 141 to conduct stage and end-of-course tests and instructor proficiency checks. This change will relieve some large schools' chief flight instructors from the responsibility of performing all stage and end-of-course tests and instructor proficiency checks and delegate that responsibility to check instructors.



The examining authority requirements have been revised to a 90% passing rate for the 24 month period instead of the last nine out of 10 applicants. This provision was requested by the FAR Part 141 school industry as a more realistic approach for ensuring quality of training and ensuring against a conflict of interest.

Examining authority for ATP and instructor certification courses is now allowed. This provision was requested by the FAR Part 141 school industry as a means to ensure against a conflict of interest.

The final rule not only restructures and reformats FAR Part 141 but also completely revises the entire FAR Part 141 school ratings. New ratings have been added that will permit FAR Part 141 schools to provide training that was not permitted under the old rule, improving business opportunities for FAR Part 141 schools.

Ground trainers are re-defined in FAR Part 141 with the current, standardized definition of "flight training devices," as outlined in Advisory Circular 120-45, "Airplane Flight Training Device Qualification." In addition, the rule change provides for use of those flight training devices under the same provisions as for ground trainers under FAR Part 141.

Powered-lift is now added as a new aircraft category for private pilot through ATP certificates and the flight instructor certificate. This new aircraft category is for aircraft that are like the V-22 (Boeing-Bell tilt rotor) or the V-8 (Harrier jump jet). Although there are no civilian certificated powered-lifts to date, it is expected that one of these aircraft will receive FAA certification soon and this proposal for pilot certification in powered-lifts will be in place when that aircraft certification occurs.

The NPRM proposed to add powered and non-powered glider class ratings for private pilot through commercial pilot certificate level, including the flight instructor certificate. In response to the commenters and after further review, the FAA has withdrawn this proposal.

The NPRM proposed to establish separate instrument ratings for single engine and multiengine airplanes. In response to the commenters and after further review, the FAA has withdrawn this proposal and the existing procedures for certification are retained.

The NPRM had proposed to require additional training and a logbook endorsement for PIC to operate airplanes having 200 or more horsepower and those PIC operating complex airplanes. In response to the commenters and after further review, the FAA has withdrawn the proposal for the additional training and endorsement for operating an airplane of 200 horsepower or more and retained the existing additional training and endorsement requirements that only requires those airplanes of "more" than 200 horsepower. However the proposal to require separate additional training and endorsements for PIC operating complex airplanes and high performance airplanes is going forward.

The revised rule provides for additional training and an instructor endorsement requirement for aircraft that require training by that aircraft's type certificate. This is in response for dealing with aircraft like the Malibu and other complex aircraft. This will allow the FAA to respond more quickly to safety problems on existing aircraft.

Specific information on and a definition of what constitutes the logging of pilot-in-command time has been included in the revision. This revision will eliminate the FAA from having to respond to requests for legal interpretations and conforms with the current policy. *[Hopefully, however, it won't cut down on the "logging time" letters received for the magazine's FlightFORUM.—Editor]*

The NPRM had proposed clarification for when two persons may log PIC time. The proposal has been withdrawn, and existing provisions still apply.

Instrument currency requirements have been revised as a result of a petition for rulemaking from a general aviation pilot who requested the currency be task-oriented instead of the old "6-6-6" rule—six hours and six approaches in six months. There were no requirements on what training had to be accomplished.

The eligibility for an instrument rating has been changed to parallel ICAO requirements. Now, only a private pilot certificate is required, and the 125 total hours of aeronautical experience is eliminated. Fifty hours of PIC cross-country aeronautical experience is still required. Accident analyses have shown that an instrument rating goes a long way in ensuring pilots against the most common type of general aviation accident—inadvertent flight into bad weather. Now, pilots can obtain an instrument rating fairly shortly after

becoming private pilots without having to accumulate 125 hours.

The required aeronautical experience requirements for applicants for additional category and class ratings have been clarified.

The required subject matter for SIC ground training on the type of aircraft for which SIC privileges are requested have been defined.

The required maneuvers and procedures for SIC qualification and recurrent qualification have been specified.

The exceptions for persons who are unable to read, speak, write, and understand English have been deleted, and the rule now provides an exception only for persons who are hearing impaired.

As a result of the existing tasks within the PTS, cockpit resource management will be required training and will be tested for all certificate levels.

Those applicants applying for pilot and instructor certificates, including the commercial, ATP, and flight instructor certificates, need only hold a third class medical certificate.

An applicant for an ATP certificate must hold a commercial pilot certificate with an instrument rating. This is a minor revision as in most cases applicants already hold a commercial pilot certificate with an instrument rating. However, the rule retains certain exceptions (i.e., military pilots and foreign pilots).

The list of items of required aeronautical knowledge for ATP applicants has been updated.

Appendix A of FAR Part 61 has been deleted, and the ATP practical test will be based on the format of the Practical Test Standards.

Minimum experience requirements for the powered-lift ATP certificate are tailored after the airplane ATP certificate.

The medical eligibility requirements have been removed from the various pilot certificate levels and placed in FAR § 61.23. This, in effect, bases the requirement for the class of medical certification on the operation being performed. This change conforms to the agency's long-standing policies and interpretations of medical certification. For example, persons applying for any pilot certificate or rating will be required to hold only a third class medical certificate with the following exceptions:

- For flight operations requiring an airline transport pilot certificate, pilots must hold at least a first class medical certificate.
- For flight operations requiring a commercial pilot certificate, pilots must hold at least a second class medical certificate.
- Pilots must hold at least a third class medical certificate for—
  - Flight operations requiring a student, recreational, or private pilot certificate; or
  - To be eligible for a student pilot certificate, any pilot certificate or flight instructor certificate, and any ratings issued under this Part.
- A pilot does not need to hold a medical certificate—
  - When exercising the privileges of a pilot certificate or flight instructor certificate with a glider category rating or balloon class rating; or
  - When exercising the privileges of a flight instructor certificate where the instructor is not the pilot in command or serving as a required crewmember.

(Note: The proposal for removing the requirement for a medical when exercising the privileges of a recreational pilot certificate was withdrawn.)

The FAR Part 141 school pass rate requirements have been changed to 80% for the 24 month period instead of eight passing out of 10 recent graduates. This provision was requested by the FAR Part 141 school industry as a more realistic approach for ensuring quality of training.

The aeronautical experience requirements for recreational pilot through commercial pilot certification have been revised.

Recreational pilots may operate aircraft in cross-country flight more than 50 nm from their base of training provided those recreational pilots receive the cross-country training given to a private pilot.

There is a revision that prohibits a person from serving as a PIC or in any other capacity as a required pilot flight crewmember while that person is taking any medication for a medical condition that results in the person being unable to meet the requirements for the medical certificate held. The revision prohibits a person from serving as a PIC or in any other capacity as a required pilot flight crewmember while that person is taking any medication that may inhibit the ability to operate an aircraft in a safe manner.

The night flying aeronautical experience exception has been eliminated at the private and commercial certificate level, except for those persons who receive their training in Alaska. In those cases a person will be given one year to obtain the required night flying aeronautical experience. This means that all private and commercial pilot applicants will be required to receive the night flying training that is specified in FAR Part 61.

Provisions have been added in FAR §§ 61.3 and 61.77 that restrict international air service operations of civil airplanes of U.S. registry for those pilots (both for the PIC and the SIC) that have reached their 60th birthday. These operational restrictions parallel the restrictions contained in the "commuter" final rule.

Although the proposal for establishing class ratings within the glider category has been withdrawn, the FAA has revised the procedures for pilot certification for the launch/tow procedures for gliders. The new revision will permit issuance of pilot certificates with the glider ratings without the existing requirements for placing launch/tow limitations on the pilot certificate. This new procedure will require glider pilots to receive additional training and a logbook endorsement from a flight instructor on the specific kind of launch/tow procedure.

Mr. Lynch is an aviation safety inspector in the FAA's Certification Branch, General Aviation and Commercial Division, FAA Headquarters. If you have questions, please contact him at (202) 267-3844. Other members of the FAR Part 61 project team that you may contact for further information include Cindy Herman, Office of Rulemaking, (202) 267-7627, and Krista McLelland, Office of the Chief Counsel, (202) 267-8054.

HOW TO OBTAIN A COPY OF THE "NEW" FAR PART 61

You may retrieve an electronic copy of the revised rule (nearly 800 pages) via the FAA's Home Page at: WWW.FAA.GOV/AVR/ARM/NPRM/NPRM.HTM or through COMPUSERVE or FEDWORLD. Or you may request a printed version of the April 4, 1997 Federal Register by calling the FAA's Office of Rulemaking at (202) 267-9680. However, expect a lengthy delay because of the high demand for this final rule. For a fee, you may request a copy of the final rule from the U.S. Government Printing Office, 710 North Capital Street, Washington, DC 20401 at (202) 275-2091. You may also purchase a copy of this final rule from the various aviation commercial printing enterprises (i.e., Jeppesen-Sanderson, etc.).

LANDINGS – Part 1

THE SHORT AND THE SOFT OF IT

by Phyllis-Anne Duncan

One of the more unknown aspects of a job in FAA headquarters is responding to what we fondly term "Congressionals." The FAA is one agency where, when you write your Congressional Representative or Senator on an issue of concern to you, we respond to every piece of such correspondence forwarded to us. Now, that has meant providing a serious answer to a person who is upset about extraterrestrials irradiating his house, but it also means we get interesting ideas from constituents that we can work into a magazine article or a presentation in the FAA's Aviation Safety Program.

One recent correspondent offered just such an idea. This person suggested that we teach pilots how to land on the grass areas of an airport in an emergency because the grass may be softer and cause fewer injuries and deaths than landing on asphalt or concrete. Whether or not that is the case would be difficult to prove—and there are some grass strips whose underlying ground is pretty hard, not to mention littered with holes, ruts, and other nose gear-snagging obstructions. However, the person's letter got us to thinking that perhaps it was time to review short and soft-field landing techniques, as well as actual and simulated emergency landings.

In our response to this concerned citizen we explained that pilots are, indeed, taught to look for the best available surface on which to make an emergency landing during flight training and that this skill is tested during practical tests. But when was the last time you had a bona fide emergency that required you to land off-airport? Was the last time you practiced emergency landings or short/soft field landings with an instructor when you were preparing for a practical test or during a BFR? These procedures can and should be practiced regularly, so that if you should ever need either of the techniques, they will be fresh in your mind. If you are really rusty on them, fly with an instructor to get back up to speed, but any of them can be practiced safely without an instructor and with careful attention to specific procedures outlined in the pilot's operating handbook (POH) or aircraft flight manual (AFM) for your airplane. If you are a rental aircraft pilot or member of a flying club, better check the by-laws or company operating guidelines; some insurance carriers prohibit landing off-airport or on non-paved strips except in a bona fide emergency.

What we will provide here in Part 1 is an overview of short-field and soft-field landings. Part 2 will cover simulated and emergency landings. Again, for specific speeds, checklists, etc., consult the POH or AFM for your particular aircraft.

Short-Field Approach and Landing

Having learned to fly at an airport where every landing was a short-field one, I got pretty accustomed to them

and really didn't know what to do with all that runway ahead of me when I went on a solo cross-country flight to a major metropolitan area airport—although I consider myself a quick learner. Short-field approaches and landings are used when you have obstacles at the approach end or a relatively short landing surface—or both.

FAA considers the short-field approach and landing to be an operation that may require maximum aircraft performance, meaning that it is a low-speed, power-on approach at an approach angle steep enough to clear obstacles (if any) in the approach path. Speed, however, has to be slow enough so that the airplane can roll out after touchdown with sufficient room to stop. (Practicing flight at minimum controllable airspeed is a good precursor to practicing short-field landings, since the same techniques and procedures usually apply.)

For a short-field landing or a landing in a confined area (off-airport), a pilot must exercise precise and positive control of both rate of descent and airspeed. The object is to clear any obstacles, land with little or no floating, and stop in the shortest distance possible. The procedures to accomplish this (found in the POH or AFM) usually involve the use of full flaps, a final approach begun at an altitude no lower than 500 feet above the touchdown area, and, if a recommended speed is not available, a speed of not more than 1.3 times Vso, or the airplane's stalling speed with flaps and gear extended.

The answer to the old "power or pitch" debate for a short-field landing is that the pilot must use a combination where the power and pitch attitude are simultaneously adjusted to establish and maintain both the right descent angle and airspeed. Because the short-field approach is power-on, use pitch attitude to maintain the angle of descent and use the throttle to maintain the proper airspeed. This simultaneous application of two control inputs must be smooth and coordinated, which, as we've said, takes practice. Throughout such an approach, adjustments to power and pitch are usually small.

Trouble can occur in two areas: gusty winds and an excessive angle of descent to clear obstacles. To account for gusty winds, you carry extra airspeed, as recommended by the manufacturer. In a short-field landing scenario, that extra speed can mean a faster touchdown speed and a longer rollout. The rule of thumb is to increase normal approach speed by no more than one-half of the gust factor. That is, if the wind is gusting 15 to 25 knots, the gust factor (the difference between the two) is 10 knots. One-half the gust factor would be five knots. In this case, add five knots to the recommended approach speed or to the speed that results from 1.3 times Vso.

If you have misjudged and established a high approach angle over the obstacle, you can find yourself running out of room fairly quickly. The normal reaction upon finding yourself too high is to cut power, but this can result in a faster rate of descent and a hard landing or a stall since you're already at a relatively slow airspeed. If you judge your descent angle so great that you would touchdown well beyond the desired point and not have enough area to stop, lower the nose and cut power to increase rate of descent. If this adjustment shallows the descent angle too much and obstacle clearance is compromised, increase power while simultaneously raising the nose. Watch the airspeed, though. If you get too slow at this point and further increase the pitch while adding full power, you may actually increase the rate of descent. At high angles of attack you are also creating high drag, and full power may not be enough to overcome the high-drag configuration. You are operating in the "region of reverse command" or, as we fondly refer to it, "the backside of the power curve." Any further attempt to arrest the descent by increasing the pitch will probably result in a power-on stall too close to the ground for recovery.

If you judge your descent angle correctly and roundout and flare without floating, the next step is to touch down at the minimum controllable airspeed in a pitch attitude that will result in a power-off stall when the power is reduced. If you close the throttle too rapidly before touchdown, a hard landing is certain. Your nose-high attitude should remain after touchdown as long as the elevator is effective, so that the wings provide aerodynamic breaking. This attitude is applicable to both tricycle and conventional gear aircraft. Even and firm pressure on the brakes lessens the after landing roll and stops you in the shortest distance possible. Some aircraft POH or AFM call for retracting the flaps as soon as all three wheels are on the ground, to put more weight on the wheels and slow you down even more, thus further shortening the landing distance. If your aircraft's procedures call for this, carefully identify the flap switch and not the gear handle in a retractable gear airplane. Sounds like a no-brainer, but many pilots have executed perfect short-field landings and retracted the gear instead of the flaps. (Remember the old adage: There are two types of retractable gear pilots—those who've landed gear up and those who will.)

If you decide you want to go out and practice short-field landings, practice them to the standards found in the FAA Practical Test Standards for your level of pilot certificate. And you should take a CFI along, especially if you have not practiced these maneuvers in a while. Also, the CFI's instant feedback will help you correct and improve your technique. Following, we have provided excerpts from the private pilot standards for a short-field approach and landing; the differences for commercial pilots are in brackets:

1. Establishes the recommended approach and landing configuration and airspeed and adjusts pitch attitude and power as required.

2. Maintains a stabilized approach and the recommended approach airspeed, or in its absence not more than 1.3 Vso, +10/-5 knots, with gust factor applied. [±5 knots]

3. Makes smooth, timely, and correct control application during the roundout and touchdown.

4. Touches down smoothly at the approximate stalling speed, at or within 200 feet [100 feet] beyond a specified point, with no side drift, and with the airplane's longitudinal axis aligned with and over the runway centerline.

5. Maintains crosswind correction and directional control throughout the approach and landing.

6. Applies brakes, as necessary to stop in the shortest distance consistent with safety.

(The PTS also require exhibiting knowledge of all the elements of a short-field approach and landing; selecting the proper touchdown point; planning for wind conditions, landing surface, and obstructions; completing appropriate checklists; and awareness of wind shear and wake turbulence.)

Soft-Field Approach and Landing

Approaching a soft-surface landing area—snow, sand, mud, or tall grass—is not so different from a normal approach to a runway that has lots of room to rollout. The difference is the pilot must touchdown in such a way that the wings continue to support the weight of the aircraft for as long as possible so that the wheels do not bog down in the soft surface and so that the landing gear is not overstressed from the soft surface. If there are obstacles, you will have to make a short-field approach with a soft-field landing.

"Soft" is a bit of a misnomer because the soft surface may be rutted or strewn with not-so-soft materials such as rocks and gravel. Soft or rough, the pilot must hold the aircraft off the surface as long as possible to allow forward speed to bleed off and to allow the aircraft to touch down gently at the minimum speed. Again, this is a nose-high attitude, and, depending upon what the POH or AFM calls for, flaps will assist in touching down at the slowest possible speed.

A dilemma arises here, because the flaps on a low-wing aircraft can be damaged by debris thrown back by the prop or wheels. This is another case where it might be advisable to retract the flaps during the after landing roll—again being careful to identify the flap switch. To keep from becoming mired in the soft surface, you may have to use more power than on an improved, firm surface. In that instance, you need to take care on maintaining control of the aircraft.

When landing a conventional gear aircraft on a soft surface, the tailwheel should touch down slightly before if not simultaneously with the main gear. Hold the tail down with perhaps full back elevator throughout the roll. This not only enhances the aerodynamic braking but helps to keep the aircraft from nosing over.

You will need to hold the nose off the soft surface as long as possible in a tricycle gear aircraft; i.e., maintain the nose-high attitude you held on approach. This may mean a considerable roll-out on the main gear until, aerodynamically, the nose gear will settle. A burst of power during or after touchdown will aid in lowering the nose gradually, so that it doesn't dig in.

Application of brakes on a soft surface is generally not recommended since the loads on the nose gear of a tricycle gear aircraft could exceed its limits. Braking in a tailwheel airplane could increase the tendency to nose over. As we said above, on a soft surface, the pilot may have to use power rather than braking.

Again, check with the POH or AFM for your aircraft and familiarize yourself with the proper procedures. Following are the standards from the private pilot PTS for soft-field approaches and landings, in case you want to practice. Commercial standards are in brackets.

In addition to exhibiting knowledge of the elements of a soft-field approach and landing; consideration of wind conditions, landing surface, and touchdown point; and maintaining the appropriate configuration, airspeed, and power and pitch adjustments, the pilot must:

1. Maintain a stabilized approach and the recommended approach speed +10/-5 knots with gust factor applied. [±5 knots]

2. Make smooth, timely, and correct control application during the roundout and touchdown.

3. Touch down smoothly with no drift and with the airplane's longitudinal axis aligned with and over the runway centerline.

4. Maintain the correct position of the flight controls and sufficient speed to taxi on the soft surface.

5. Maintain crosswind correction and directional control throughout the approach and landing.

6. Complete the appropriate checklist.

We can't say it enough: Check the POH or AFM for your aircraft for specific short- and soft-field landing procedures and checklists.

OSHKOSH 1997

by H. Dean Chamberlain

If you are planning on flying to Oshkosh, WI, for this year's Experimental Aircraft Association's (EAA) 45th annual EAA Fly-In Convention, now is the time to complete your travel plans. The date for this year's Fly-In Convention is July 30 to August 5. As part of those plans, you need to review the special Air Traffic Management Plan Notice to Airmen (NOTAM) issued for the event. The NOTAM provides detailed arrival and departure procedures for aircraft flying to the Oshkosh area effective July 28 to August 5. *Note the special procedures start two days before EAA Oshkosh '97 officially opens.*

This article does not provide detailed operating procedures for flying to Oshkosh. Rather, it provides a brief overview of some of the important safety information and flight services provided in the NOTAM, video, and reference booklet prepared for the event. Pilots planning on flying to Oshkosh should obtain copies of the below referenced products designed to help them plan for a safe flight to and from Oshkosh. Like all flights, no flight is complete until the pilot and passengers are all home safely. Getting to Oshkosh is only half of the trip. Getting safely home after a great visit to Oshkosh is the pilot in command's ultimate responsibility.

FAA OSHKOSH NOTAM, VIDEO, AND FLY-IN QUICK REFERENCE BOOKLET

In addition to the NOTAM, the FAA Office of System Safety has produced a video and Fly-In Quick Reference Booklet highlighting the procedures outlined in the NOTAM. For a copy of the NOTAM, video, and Fly-In Quick Reference Booklet, you can call (800) 564-6322. You can also borrow a copy of the video from you local Flight Standards District Office (FSDO) by contacting your local FAA Safety Program Manager at the FSDO.

Oshkosh information will also be published in the Special Airshow Section of the June 19 and July 17 FAA Notices to Airmen publication.

Even if you have flown to Oshkosh in the past, you will still need to review the NOTAM for any changes.

If this is your first flight to Oshkosh, you need to get a copy of the NOTAM and study it in detail. You should also try to review a copy of the video. If you are a first time flight arrival, finding yourself number 10 in trail to enter the traffic pattern is not the time to wonder what is going to happen next.

Although the arrival and departure procedures are not complicated, they do need to be understood very well. The procedures are designed to move hundreds of aircraft safely, quickly, and predictably in and out of Oshkosh by having both pilots and controllers follow the same published procedures. Knowing and following the published procedures are especially important in the case of an emergency at Oshkosh or one of the nearby airports.

Another important operational procedure is the limited use of radio communications to control aircraft landing or departing Oshkosh. The NOTAM outlines when pilots should communicate and when they should just monitor their radios. Strict compliance with the published communication procedures will avoid any unnecessary frequency congestion while speeding up the landing or departure process. But every pilot should contact ATC immediately if there is any question of safety of flight or in case of an emergency. Pilots should also remember some of the aircraft flying to and from Oshkosh don't have radios.

The NOTAM has special sections for both IFR and VFR pilots.

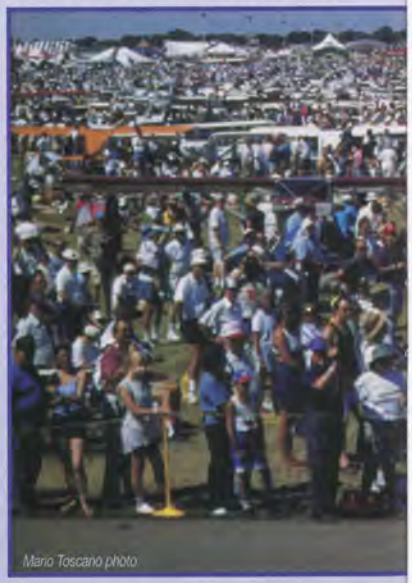
VFR pilots should pay particular attention to the airspace information given because of the number of aircraft involved.

WAYS TO MINIMIZE RISK OF MIDAIR COLLISION

All pilots need to pay attention to other traffic as they approach the Oshkosh area. Since there is such a performance mix among the different types of aircraft flying to, through, or in the Oshkosh area, there is an increased mid-air collision risk. One way to reduce that risk is to fly with your landing lights and beacon or strobe lights on within 30 miles or so of Oshkosh. If you are flying on an airway, you might want to extend that lights-on distance. Pilots need to be alert for traffic from any direction as they approach Oshkosh. You can also monitor the appropriate ATC frequencies listed in the NOTAM when flying within the area. Everyone should also use the appropriate altitude for your direction and type of flight, IFR or VFR.

VFR CROSSING OF LAKE MICHIGAN

The NOTAM outlines in detail two important safety services for pilots planning to fly across Lake Michigan. One is a chart showing the minimum reception altitudes and coverage areas for communications around and over the lake for the altitudes of 1,500, 2,500, 3,500, and 4,500 FT MSL. Radio coverage of the emergency frequency 121.5 MHz is available over most of the lake at a minimum altitude



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of approximately 4,600 Ft. MSL. Higher is always better.

The second safety service is the Lake Reporting Service (LRS) provided by the Green Bay and Lansing AFSS's for aircraft crossing Lake Michigan. Although the Lake Reporting Service is outlined in the Aeronautical Information Manual (AIM), briefly, a LRS flight plan is a separate flight plan filed when crossing the lake. It is like a typical flight plan, but it also requires the route and time over water. Pilots must list the departure and arrival shore crossing points. The diagram in the NOTAM shows a map of the lake with VOR frequencies, radio frequencies, minimum reception altitudes, land reporting points, and the responsible AFSS's for various locations around Lake Michigan. A chart is also provided which includes distances.

Once a LRS flight plan is activated, radio contact must be made every 10 minutes. If no contact is made within 15 minutes, Search and Rescue will be alerted. Pilots are responsible for activating and canceling their respective Lake Reporting Service flight plans. Pilots who have a communication failure must land and notify AFSS as soon as possible.

Please note: A Lake Reporting Service flight plan is separate and in addition to your normal flight plan. When activating and canceling your Lake Reporting Service flight plan, please be specific as to what flight plan you are activating and closing. When departing Oshkosh, please file your Lake Reporting Service flight plan in person or by telephone at the Oshkosh FSS before departure to avoid the radio congestion caused by air filing.

ELT MONITORING EN ROUTE

Pilots flying to and from Oshkosh should periodically monitor 121.5 MHz en route to check for any activated emergency locator transmitters (ELT) that might be reporting an aircraft accident. If you detect an ELT signal, contact the appropriate air traffic control facility responsible for the area you are in with the information.

FUEL EXHAUSTION

Another potential problem for some aircraft is fuel exhaustion. Because of the potential delay with so many aircraft operating within the Oshkosh area, including the risk of an accident on the field closing the airport for a while, all pilots should make sure they have enough extra fuel on board for the flight plus any required IFR or VFR minimums plus enough fuel for an in-flight hold of at least 30 minutes or more. This is a case where the more fuel, the better. Just stay within your approved weight and balance limitations.

In addition to allowing yourself extra fuel, VFR flights should extend their projected flight plans by 30 minutes to compensate for any unexpected delays because of traffic.

All pilots should review the flight plan filing and closing procedures in the NOTAM.

MAINTAINING SAFE FLYING SPEEDS

Because of the mix of traffic, all pilots might want to practice flying their aircraft at its minimum safe, the operative word is SAFE, airspeed before arriving at Oshkosh. Whether you do it at home on a practice flight or en route to Oshkosh, you should be able to control your aircraft safely at its slowest recommended airspeed, its normally recommended airspeed, and at a faster than normal airspeed. The same is true for landing approach speeds. The reason is you may be mixed in with other aircraft that may be slower or faster than you. You may also need to be able to maintain your place in trail of other aircraft. But as the NOTAM states, if you cannot safely reduce airspeed to follow slower traffic, inform ATC and do not, we repeat do not, fly at any airspeed that jeopardizes your safety of flight.

The NOTAM explains in detail with charts and text the modified VFR arrival procedures in effect during Oshkosh. All pilots need to review these procedures before arriving in the Oshkosh general area because even IFR flights may be directed to follow the VFR procedures when the weather is VFR at the airport.

Because of the various planned flight activities at Oshkosh during the EAA Fly-In Convention and the special operating restrictions, including when the airport is closed because of the daily airshow, all pilots need to review the NOTAM for such items as airport operating hours, arrival altitudes, airspeeds, airport surface operating procedures, airport safety notes, parking notes, and other operating procedures listed in the NOTAM.

ELT CHECK

After landing and before securing your aircraft, all pilots in radio equipped aircraft should do a final radio check on 121.5 MHz to check for an inadvertent emergency locator transmitter (ELT) activation. With the large number of aircraft attending Oshkosh, you can imagine the difficulty in finding the source of an ELT signal.

FAA SAFETY CENTER

While at Oshkosh, visit the FAA's

OSHKOSH 1997 FAA SAFETY CENTER SEMINAR SCHEDULE

(Subject to change without notice)

WEDNESDAY, JULY 30

0830 - 0945	"Top Dog Training/Preflight Prep - The Way it Should Be"
1000 - 1115	"Handling Inflight Emergencies - Part I"
1130 - 1245	"Human Performance in Recent Accidents - Part I"
1300 - 1415	"Aircraft Maintenance Records - How to Organize the Paperwork"
1430 - 1545	"Solving the Mysteries of Special Use Airspace"
1600 - 1715	"Weather Detection for the 21st Century"
1830 - 1945	"Preventive Maintenance for Pilots and Owners"
2000 - 2115	"How to Crash an Airplane (and Survive!)"

THURSDAY, JULY 31

0830 - 0945	"Aeronautical Decision Making for the G.A. Pilot"
1000 - 1115	"Handling Inflight Emergencies - Part II"
1130 - 1245	"GPS - The Pilot's Pal"
1300 - 1415	"FLYING FUN - While Avoiding Unwanted Adventure"
1430 - 1545	"When Everything is Critical - What do You do?"
1600 - 1715	"The Inside Story of How to Buy an Aircraft"
1830 - 1945	"Just 'Plane' Fun; Question: What is Aviation Jeopardy"
2000 - 2115	"Pilot Certification Rule - Part 61 : New Changes and Update"

FRIDAY, AUGUST 1

0830 - 0945	"The ABC's of Basic Fuel Management"
1000 - 1115	"Making Your Own Rules: Developing Your Personal Minimums Checklist""
1130 - 1245	"Flight Testing Amateur-Built Aircraft"
1300 - 1415	"NTSB Board Hearings""
1430 - 1545	"Never Again"
1600 - 1715	"The Inside Story of How to Buy an Aircraft"
1830 - 1945	"METAR/TAF Weather Format - One Year Later"
2000 - 2115	"So You Want to Build an Airplane"

SATURDAY, AUGUST 2

0830 - 0945	"Just 'Plane' Fun; Question: What is Aviation Jeopardy"
1000 - 1115	"GPS - The Future is Now"
1130 - 1245	"Avoiding That Stall/Spin Feeling!"
1300 - 1415	"After the Dust Settles - NTSB Reports the Facts"
1430 - 1545	"Judgement Skills for Driving, Living, and Flying - For the Entire Family"
1600 - 1715	"Solving the Mysteries of Specal Use Airspace"
1830 - 1945	"G.A. Stall Characteristics and Cockpit Presentations"
2000 - 2115	"Human Performance in Recent Accidents - Part II"

SUNDAY, AUGUST 3

0830 - 0945	"WAAS/LAAS - G.A. Navigation Systems of Tomorrow"
1000 - 1115	"Flying Left Seat - Passing Your Next Medical"
1130 - 1315	"Meet the Administrator"
1330 - 1415	"Flight 2000"
1430 - 1545	"Cause and Prevention of Landing Accidents"
1600 - 1745	"The Most Dangerous Game"
1830 - 1945	"Low Cost Avionics - Past, Present and Future"
2000 - 2115	"Amateur-Built Aircraft Evaluatuion and Certification"

MONDAY, AUGUST 4

0830 - 0945	"Aeronautical Charts: How They Can Be a Life Saver!"
1000 - 1115	"Why Home Builts are Having Accidents"
1130 - 1245	"Why Engines REALLY Quit: The Top 10 Reasons"
1300 - 1415	"Aviation Safety Reporting System (ASRS) - What it Can do for You"
1430 - 1545	"Mountain Flying Techniques"
1600 - 1715	"VFR Airspace Operations and Equipment Requirements"
1830 - 1945	"Flight 2000"
2000 - 2115	"Approved Parts"

TUESDAY, AUGUST 5

0830 - 0945	"Top Dog Training/Preflight Prep - the Way it Should Be"
1000 - 1115	"Handling Inflight Emergencies - Part III"
1130 - 1245	"Design Enhancements for Terrain and Low Speed Awareness"
1300 - 1445	"Review of FAR Part 61 - New Changes and Updates"

Safety Center for all your aviation needs. The FAA Safety Center has Flight Service Station specialists available for your weather and flight planning needs, Flight Standards aviation safety inspectors from the Milwaukee FSDO to provide support, various FAA displays and exhibits as well as an ongoing schedule of FAA and industry safety presentations. Many of the presentation are given by nationally known speakers. Attached is the schedule of FAA Forum presentations. The FAA Safety Center Forum area opens daily at 0830.

SPECIAL AIRCRAFT PROCEDURES

As in past years, there are special procedures for various types of aircraft and type of flight plans. Warbirds, aircraft without radios, ultralight vehicles, seaplanes, IFR procedures and reservations, VFR aircraft and procedures, the establishment of a temporary air traffic control tower at Fond du Lac (FLD) airport, and the use of reduced arrival and departure separation standards in the Oshkosh area are all covered in the NOTAM.

Now if the weather folks could only put out a NOTAM guaranteeing perfect weather for Oshkosh. But regardless of the weather, if you are flying to Oshkosh, please plan carefully, file and activate your flight plan, take your time, remember to close your VFR flight plan upon arrival if you are going VFR, and, last but not least, "Have a great time."

CALENDAR OF EVENTS

In the March 1997 issue we requested calendar items 60 to 90 days in advance of the event, but to assure that information reaches us and subsequently the readers in time for them to plan attendance at your event, we are going to have to change that schedule. *FAA Aviation News* publishes eight issues a year: January/February, March, April, May/June, July/August, September, October, and November/December. Please submit your notices for the Calendar of Events section so that they will appear in the issue before your event. For example, for a mid-August event, we would need to print the date of the event in the May/June issue; consequently, we would need the notice no later than mid-March.

We enjoy printing notices of aviation events across the country, and we hope to serve both the sponsor and the reader with this schedule. Send notices to Editor, *FAA Aviation News*, AFS-810, 800 Independence Ave., S.W., Washington, DC 20591; fax: (202) 267-9463; or send an e-mail to: Phyllis.Duncan@faa.dot.gov .

SEPTEMBER 14 - 15 - The National Air Transportation Association (NATA) will hold a Line Supervisor Training Seminar in Houston, TX. The training will be held again in New Orleans, LA on November 10 - 11. For further information, call Doug Carr at (800) 808-6282. NATA will also conduct a new course, Flight School Manager Training, on September 19 in Dallas, TX and November 7 in Santa Monica, CA. For information on the flight school manager training, call Steve Lofgren at (800) 808-6282.

SEPTEMBER 20 -21 - EAA's North Central "Old Fashioned" Fly-In will be held on these dates at the Whiteside County Airport, Rock Falls, IL. The pancake breakfast is scheduled for the 21st, and the Fly-In will offer forums, workshops, and exhibits. For further information call Gregory Erikson at (630) 513-0642 or check the web site at http://members.aol.com/nceaa/index.htm .

OCTOBER 4 - 5 - The California Coast Airfair 97 will be held at Half Moon Bay Airport. There will be ground displays and flyovers of military aircraft, aerobatic performances, radio controlled airplanes, Warbirds, historic aircraft, homebuilts, and foreign aircraft. Sunday is "Celebrity Day" with appearances by aviation greats, and the sponsor, the Half Moon Bay Airport Pilot's Association, promises a few surprises. For further information, call Ms. Nancy Auld at (415) 726-ROLL.

NOVEMBER 4 - 5 - FAA's Great Lakes Region Airport Division will hold is 13th Annual Airport Conference at the Holiday Inn in Rosemont, IL. This year's conference will include 30 speakers on such topics as planning, engineering, funding, construction quality, operations, safety, capacity, and the environment. For registration and general information contact Carol Koenes at (847) 294-7013.

MARCH 12 - 14, 1998 - The annual Women in Aviation Conference will be held in Denver, CO. For further information, contact Dr. Peggy Baty at (937) 839-4647; fax (937) 839-4645.

MARCH 29 - 31, 1998 - The 10th Annual Conference on Quality in Commercial Aviation will be held at the Grand Kempinski Hotel in Dallas, TX. For further information contact Helen Schneider at (817) 776-3550; e-mail at sgmeet@airmail.net; or check the following WWW home page: http://sgmeet.com .

Let Me Chart My Case One More Time

by H. Dean Chamberlain

A response published in our July/August 1996 Flight Forum titled "Current Charts" has resulted in a nation-wide debate among pilots, aircraft owners, magazine writers, FAA aviation safety inspectors, and those on the Internet; When does a pilot need a current chart? By regulation, the answer depends upon what you are flying and the rules under which you are flying. From a practical safety standpoint, as we said in the previous July/August issue, FAA believes all pilots should use current charts even if the regulations don't expressly require them.

The debate also included the question of when does a pilot need a current data base in his or her GPS receiver. Like the question about charts, the regulatory answer depends upon the type of GPS unit you're talking about and the type of flight operation involved. But as we said in our original response, we think that pilots should also use current data bases.

Aviation operates in a dynamic environment. Even on a short cross-country flight, a change in weather, an accident at the destination airport, or an equipment malfunction may require a pilot to change plans and divert to another airport the pilot may not be familiar with. An unforecasted headwind has caused more than one pilot to make an unplanned stop for fuel at an enroute airport. Because of these reasons, FAA thinks current charts are an important safety feature on any flight regardless of whether or not the regulations specifically requires them.

Having said that, the following questions and answers address the majority of the questions pilots and others have asked about chart and data base currency.

First, it is not FAA policy to violate anyone for having outdated charts in an aircraft. Call them old charts, cargo, baggage, or ballast, old charts are not forbidden in an aircraft. Plus in an emergency, an old chart is better than no chart at all. Enough said about old charts.

Second, as some have rightly pointed out, under FAR Part 91 not all pilots are required to carry charts by regulation. FAR § 91.103, Preflight action, does not specifically state that pilots must carry current and appropriate charts. It says, "Each pilot in command shall, before beginning a flight, become familiar with all available information concerning that flight...."

FAR Part 91 does require certain pilots to carry charts.

FAR § 91.503, Flying equipment and operating information, requires the pilot in command of large and turbine-powered multiengine airplanes to "...ensure that the following flying equipment and aeronautical charts and data, in current and appropriate form, are accessible for each flight at the pilot station of the aircraft...."

Other operating sections of the FAR such as Part 121 and Part 135 operations have similar requirements.

Third, since some pilots thought they could be violated for having outdated charts or no charts on board during a flight, we need to clarify an important issue. As we have said, it is not FAA policy to initiate enforcement action against a pilot for having an old chart onboard or no chart onboard if one is not required by regulation for a given flight. However, if the pilot has an accident or makes a procedural error, such as violating Class B airspace, the question of did the pilot have all available information needed for the flight will be asked and it may become an element of any enforcement proceedings.

Fourth, the issue of current data bases in handheld GPS receivers is a non-issue because the units are neither FAA approved or required for flight and therefore don't have to have any data base: current or old. Since they are not "installed" in an aircraft, FAR § 91.21, Portable electronic devices, may apply.

Nor do panel-mounted VFR-ONLY GPS receivers have to have a current data base because, like handheld GPS receivers, the pilot is responsible for pilotage under VFR. If it is inoperative, FAR § 91.213, Inoperative instruments and equipment, may apply.

Having said all this, if a pilot is involved in an enforcement investigation and there is evidence that the use of an out-of-date chart, no chart, or an out-of-date database contributed to the condition that brought on the enforcement investigation, then that information could be used in any enforcement action that might be taken.

Finally, the question of FAA approved IFR approach certified GPS receiver installations requires an explanation. These units must be maintained in accordance with their appropriate operating and maintenance requirements for use during IFR. Since GPS is a supplemental navigation system at this time, no pilot has to operate his or her FAA approved IFR GPS unit. But if that IFR GPS receiver is going to be operated under IFR flight, it must be operate in compliance with its approved operating instructions and limitations as listed in its installation documentation, such as a FAA technical standards order (TSO) or supplemental type certificate (STC). If it is inoperative, FAR § 91.213, Inoperative instruments and equipment, may apply.

TO SUMMARIZE

Yes, you can carry old charts in your aircraft.

Yes, the lack of a current chart could be an issue in an enforcement case if the pilot violates an airspace requirement because of a lack of current information.

Yes, not all pilots are required to carry a chart.

Yes, pilots must become familiar with all available information concerning that flight.

Yes, current IFR charts and appropriate NOTAM's provide the best source for the latest IFR flight information.

Yes, handheld GPS receives and VFR-only, panel-mounted GPS receivers don't have to have current data bases because the pilot is responsible for accurate VFR pilotage.

Yes, IFR approved GPS receivers must be operated in accordance with their appropriate operating procedures and limitations when operated under IFR, and

Yes, all pilots need to know and operate within the limitations of their respective navigational devices.

Hope we answered your questions.

That First Flight...It Had Better Be Right!

by Lorin L. Wilkinson

You've heard that song before, I'm sure. Well, perhaps there is good reason it gets played so often. The majority of homebuilt accidents and incidents occur during the initial test flight or during the first few hours of flight time. This is also evident during the familiarization period with a newly purchased G/A aircraft, especially one with greater performance and more bells and whistles than the aircraft we had been flying. We all love to climb the ladder, don't we?

Here is a little, but revealing, test that I wish each of you would take before you "kick the tires and light the fires" on that next first flight. Look into a mirror! The 15-coat, hand-rubbed finish on the vertical stabilizer or the polished canopy of your "new bird" will do in a pinch, but you really want to be able to see into your own eyes. When you establish that eye contact, ask yourself with all sincerity, "What are my buns worth?"

Don't snicker! Don't shrug and say, "I can handle it." Can you, really? You are about to risk your buns here; you had better be sure! Do you have the qualifications and experience, recent experience, to do the job? Are you knowledgeable and prepared to deal with any discrepancy, irregularity, or emergency that might occur? Will your actions and reactions be timely and correct? Hey, I sure hope so; it's your buns not mine! Here are a few thoughts you might want to consider.

Your aircraft: You have spent many months, even years, building your dream bird. You have done absolutely, without compromise, the best work you could possibly do, using the finest materials available. You have never ever uttered or even thought the phrases, "That's good enough" or "It's done now and I'm not doing it over." You have had numerous inspections by your EAA Chapter Technical Counselors and have heeded their advice and suggestions. To paraphrase that master builder, Tony Bingelis, "There are about 100,000 steps in building a homebuilt. If you are 99.9% perfect you still have screwed up on 100 and you had better be sure that they are only cosmetic!"

A suggestion: A few days before the big event, invite several Technical Counselors to give your aircraft a thorough preflight inspection and to note all discrepancies. You might be surprised, and possibly relieved, at what they might find. [Editor's note: Don't forget that the FAA has to issue an Amateur-built Airworthiness Certificate before that first flight can even be considered.]

Yourself: Many builders let their flying skills stagnate during the building process as all extra cash and time are committed to the project. You must now take the time to get current and qualified. Study and pass that BFR you have been putting off, and make sure you have a current medical as well. Spend a few air hours sharpening up on the maneuvers that you'll be performing during your test period: slow flight, stalls, spot landings, including simulated engine failure or other emergency induced landings. If possible, get some time in an aircraft like the one you will be testing, at least one with like flight characteristics. Contact other owners of aircraft like yours and discuss flight characteristics, performance data, and any idiosyncrasies they may have discovered during their

flight testing. Flight reports in magazines tend to be flattering and favorable. Few aviation writers tell the real story, overlooking the bad stuff, as they want to be invited to do another flight report in the future. If your aircraft is a taildragger, currency in a taildragger is a must. In short, prepare yourself as thoroughly as possible for the job ahead.

Location: Very few of us are fortunate enough to be living on an airfield that is suitable for flight testing our homebuilt. Some of you will have but one choice. The ideal site for me would be a sod runway of adequate length, without obstructions, no tower, and far enough from town to afford plenty of off airfield landing sites. With this set-up you will have no crowd of gawkers, you will probably be the only one in the traffic pattern, and you will not have the additional work load and distraction of talking to a tower. The sod runway is especially beneficial if you are testing a taildragger. Fire equipment? Bring your own. A number of good sized CO2 or Halon extinguishers in the back of a pickup will do. To be blunt, impact trauma causes the majority of injuries and/or death in light aircraft accidents, not fire. A well-equipped EMT would not be a bad idea as well as some cutting tools such as a hack saw and bolt cutters and perhaps a cellular telephone to summon help if needed.

Ground Crew: A test flight is not the time for a family reunion. Children are particularly disruptive and distracting. You need no more than three knowledgeable, reliable helpers. At least one should be your local EAA Flight Advisor with a handheld radio, someone who can answer your questions if you have them or supply information when needed. All should be familiar with and be briefed regarding your aircraft and your requirements as well as your flight plan. They should know the location of, and how to operate, the safety and emergency equipment.

The Big Day: Do not set an irrevocably given day for your first flight. Choose a period of ideal flight conditions then go when the conditions are right. You don't really want to be fighting a gusty crosswind on a first flight; there is always a better day coming. Be sure to re-brief your crew on your game plan and emergency equipment if you have to reschedule. We will assume that you have completed your taxi tests, both slow and fast, and that you have corrected any discrepancies. Do a thorough preflight...again. Limit your first flight to exploring only a few parameters. Control response and effectiveness, slow flight, and approaches to a stall would be more than adequate. This will give you a feel for the aircraft during flight, approach, and landing. You should also note your engine performance and radio the readings to your handy Flight Advisor who will note them for the record.

There is absolutely no substitute for thorough planning and preparation for a first flight. That includes keeping disturbing distractions to an absolute minimum. You will have enough on your mind and enough to do without having to crack the whip in the center ring. There will be time enough to show off your pride and joy after you get in a few flights and a few hours. You will also be more at ease and enjoy it more then as well.

Building, then flying, your homebuilt for the first time will be one of the most rewarding and satisfying experiences of your lifetime. Make sure that you will be able to share this adventure with your great grandchildren.

Light winds and smooth air!

The author began flying more than 50 years ago at the age 15. He has flown nearly 30,000 hours in numerous types of aircraft and vehicles from the Hiperlight ultralight to the Douglas DC-10, including 2,500 hours instructing primary through instrument and multi-engine. He is now building his third homebuilt, a Hatz XB-2 biplane. This article originally appeared in the EAA Flight Advisor Newsletter.

To view an informative new FAA video called "First Flights in Your Ultralight or Light Plane," contact the Safety Program Manager at your local FAA FSDO.

Who Is Responsible? Who Is Responsible? Who Is?

by H. Dean Chamberlain

You are. It's that simple. As we like to say around the office, "It doesn't take a rocket scientist to figure out the answer to that question." Of course, we have to be careful to whom we say that phrase because the FAA has some former NASA rocket folks working here. Rocket folks are not bad.

Although our space-age attempt at humor probably failed to get off the ground, the following subject doesn't need a rocket scientist to figure out the answer to one of the most important questions in aviation.

Who is responsible for ensuring that every airman passes his or her appropriate certification test?

No, it is not the certificated flight instructor, ground instructor, instructor at an A&P aircraft technician school, the designated examiner, or the FAA inspector about to test your knowledge and practical skills. The person responsible for ensuring that you are prepared for passing your certification knowledge and practical skills test is you: The Applicant.

Recently, two questions about pilot applicants taking their knowledge and practical tests came to our attention. In one case, according to the *Designee Update*, the Flight Standards newsletter published for examiners, designees, and instructor communities, a private pilot applicant went to one of the computerized knowledge test centers to take the private pilot knowledge test. When asked by the test center which test he wanted, the short or the long test, the applicant said the short one. Like we said, it doesn't take a rocket scientist to figure out that answer. If given the choice, all of us would rather take a short test than a long one any day.

The problem was the pilot took the wrong test. New private pilot applicants, those without any type of pilot certificate above the student certificate level, must take the "long" or complete private pilot knowledge test. Certificated pilots who have taken a "long" version of the test for another certificate, such as a recreational pilot or a helicopter pilot learning to fly airplanes, need only take the "short" version of the airplane test.

FAA believes if you answered the basic question once, you don't have to be tested on that question again. The various short versions, there are different ones, depending upon the type of pilot certificate you currently hold and the type of certificate you are being tested for, are designed to test your knowledge of the new aircraft and operation you are transitioning to.

In the case of our new applicant, he took and passed the wrong test.

The mistake was not discovered until after the applicant took and passed his practical test with a designated pilot examiner, and the certification package was being reviewed by the FAA certification folks in Oklahoma City. Because the wrong knowledge test was taken, the practical test became invalid. The applicant had to retake both the knowledge and the practical tests at his additional cost.

Should everyone involved in the testing process have caught the mistake? Yes.

Did they? No.

Who was ultimately responsible for the error? The applicant! Rather heartless you say? Maybe.

But it doesn't take our proverbial rocket scientist to read the various regulations that deal with all airman testing.

In the second case we heard about, an applicant used a non-civil airworthy aircraft to take the practical test. In this case, the applicant had checked with FAA about using the old military aircraft and was told it was okay to use it. Later the question came up about whether or not the aircraft had a civil airworthiness certificate because it was a former military aircraft design. In this case, there was no question the aircraft was safe, just whether under the rules of converting the former U.S. military aircraft to civilian use authorized this particular model to be certificated under a standard airworthiness certification.

Once again, the applicant passed his practical flight test. Once again, there is a question about how this case will be resolved.

Both of these examples bring up the question of how can an applicant, especially a new student pilot applicant going for his or her first recreational or private pilot certificate, know all of the rules. The answer is: It is part of learning to become an airman, whether you want to be an aircraft repair technician, an air traffic controller, or a pilot of a C-152 or of a B-747, to learn those rules that apply to your respective rating.

For example, FAR Part 61 deals with pilots and flight instructors; FAR Part 63 deals with flight crewmembers other than pilots; and FAR Part 65 deals with airmen other than flight crewmembers. FAR Part 67 deals with medical standards. Each FAR has its own eligibility requirements. You don't have to know all the regulations. You just need to know those that apply to your particular rating and proposed flight.

How do you learn the rules? The various knowledge tests and practical tests list the requirements for taking the different tests. The practical test standards (PTS) for pilots lists the various requirements for the various categories of certificated pilots wanting to either take the initial rating tests or those wanting to add a rating to a certificate.

The Introduction to the Private Pilot Practical Test Standards for Airplane (SEL, MEL, SES, MEL), for example, explains in detail the PTS concept; it provides a description of the areas of operation and the tasks an applicant must successfully demonstrate; it lists the references used in the test; it explains how the practical test is to be conducted; and it provides a list of important areas the examiner or FAA inspector must review during the test.

The PTS also lists the pilot practical test prerequisites that have to be met before the applicant can take the test. These include passing the appropriate pilot knowledge test within the designated time period, have the instruction and aeronautical experience required, have the appropriate medical if one is required, be old enough, and have the appropriate instructor endorsement.

The Private Pilot PTS also states that "The private pilot applicant is required by FAR § 61.45 to provide an appropriate, airworthy, certificated aircraft for the practical test. The aircraft must be equipped for, and its operating limitations must not prohibit, the performance of all TASKS required on the test."

The rules and PTS are available. The question is "Are applicants reading them as part of their training?" They ought to be reading them. In fact, the rules and PTS are a directed outline that each applicant must train to be able to pass the appropriate rating test.

But apparently some applicant may not be studying and using the PTS and rules as their training outline. It is always a good check on the instruction students receive from their instructors. If the instructor is not preparing you to meet all of the requirements outlined in the PTS, it is time to either have a long conversation with the instructor or to find a new instructor who will train you to meet the PTS requirements.

In some cases, we may think our teachers have the responsibility to teach us all we need to know. That is not true. Flying is a never ending learning experience. Instructors can only show us what we need to learn, the rest is up to us, the students. We may want to blame our instructors, and others for our mistakes and failures, but the FAR are very explicit in their determination of responsibility of and certification requirements of all those who fly or work in aviation.

Good luck on your next test. You don't have to be a rocket scientist to get off the ground, launch a career, or just have fun flying; you just need to know the rules.

LOOKING FOR AN OUTSTANDING CFI AND AMT

by Louise Oertly

For the past 35 years the FAA and aviation industry have agreed on at least one thing—that individuals should be recognized for their outstanding efforts in the flight instructor and the aviation maintenance technician fields. Without these individuals the future of aviation would be questionable as each in his/her own way keeps the aircraft in the sky. For this reason the General Aviation Industry Awards Program was initiated to recognize the important role the flight instructor and the aviation maintenance technician play in aviation safety and pilot education.

The application form for the 1998 Flight Instructor and Aviation Maintenance Technician of the Year Awards is now available. There are three levels of winners: district, regional, and national. The district and regional award winners will be contacted by their local Safety Program Manager (SPM) about their awards presentations. The national winners are selected by an independent panel of aviation industry personalities and will be notified by August 3, 1998. The 1998 award winners will be nationally recognized at the 1998 National Business Aircraft Association's Convention (October 19-21, 1998) in Las Vegas, NV. Travel and expenses for the ceremonies will be provided for each winner and one guest. Plus, the winners will also receive valuable merchandise and monetary gifts (approximate value $10,000) provided by industry sponsors and contributors.

HOW TO APPLY

We all know someone whom we think is a great instructor or mechanic so why not take the time to nominate them. (You can even nominate yourself!) To be eligible an applicant must operate within the United States and be an active Certificated Flight Instructor under FAR Part 61 or an active Certificated Aviation Maintenance Technician under FAR Part 65. The nominees will be judged on the basis of specific accomplishments and sustained superior performance.

The application package should include the following:

- The application form (reprinted next page)
- A resume of the applicant's professional accomplishments
- An explanation of the top five contributions the applicant has made to the industry, including any safety contributions, such as conducting safety seminars and/or using particular instructional techniques, and other information pertinent to this type of award.
- Letters of recommendation, commendation and recognition
- A list of the applicant's awards and recognition.
- Supporting documentation, such as magazines/newspaper articles, etc. (maximum of 10)
- An essay (not to exceed 1,500 words) explaining why the applicant is deserving of this award.

The application package must be submitted to the applicant's Safety Program Manager at the local FAA Flight Standards District Office by December 31, 1997. Contact your local SPM for more information.

APPLICATION FORM

1998 FLIGHT INSTRUCTOR AND AVIATION MAINTENANCE TECHNICIAN OF THE YEAR AWARD

INSTRUCTIONS:

- Photocopies of this form are acceptable.
- All entries must be typewritten or neatly printed.
- Eligible applicants may submit their own applications or be nominated by another individual.
- Attach application package.

Check One: ❒ Certified Flight Instructor (CFI) ❒ Aviation Maintenance Technician (AMT)

Name: _____

Social Security #: _____

CFI Certificate #: _____

AMT Certificate #: _____

FCC License # (for AMT): _____

Address: _____

City/State/Zip: _____

Home Telephone: _____ E-mail: _____

Employer: _____

Employer Address: _____

City/State/Zip: _____

Employer Telephone: _____ Fax: _____ E-mail: _____

Year first designated as a CFI or AMT: _____

Years of Experience: _____

Total Instructional Hours for CFI Applicant: _____

Certificates and Ratings Held: _____

Submitted By:

Name: _____ Date: _____

Address: _____

City/State/Zip: _____

Telephone: _____ Fax: _____

Signature of person submitting nomination: _____

All applications and attached materials become the property of the Selection Committee and will not be returned.

• Treating Neighbors with Respect

I read with great interest your series on Seaplane Safety Issues. The section on noise and neighborhood problems was most appropriate.

In 1985, I purchased a Lake amphibian. This was seven years prior to my planned retirement. During the summer months I planned to base the aircraft at a nearby lake in Maine where we have a summer cottage. Knowing that I would have to leave for work at 6:30 am, something would have to be done to keep my vacationing neighbors from open revolt. My plan was to visit each neighbor at the lake and inform them of my intended plan. I then invited each of them and/or their children for a sight-seeing ride. Most took me up on my offer, and those that did not expressed appreciation at my concern. There was never a concern about the 6:30 a.m. wakeup call that a 200 HP engine makes.

All of this points out that there are ways to make our flying more neighbor friendly. Just use some common sense and be proactive. Don't wait for complaints to do something first.

Peter De Angeles
Tallahassee, FL
Ellsworth, ME

Thanks for reminding everyone what can be done when people work together and care about each other. It also sounds like you have some great neighbors in Maine.

• AWOS Altimeter

I have a question regarding the use of AWOS altimeter information as shown on Instrument Approach Procedure charts.

A review of approach Charts at airports where AWOS is listed reveals several different notes pertaining to the use of AWOS altimeter setting information. Here are some examples:

"Use (another airport's) altimeter setting." "If local altimeter setting not received, use other airport's)." "Use local altimeter setting on CTAF/AWOS, when not available, procedure not authorized." "Obtain local altimeter setting on CTAF; if unavailable use Albany."

It appears that at some airports the AWOS altimeter is to be ignored in favor of another nearby airport's altimeter setting. At others, the statement simply uses the word "received," implying that either the CTAF or the AWOS frequency may be used. There are still other airports with both an AWOS and CTAF frequency listed but no note whatsoever, leading a pilot to assume that either source is acceptable. Finally, there are airports where "CTAF," "UNICOM," or "AWOS" is specifically stated as the altimeter setting source.

In the examples above, the last one is for my home airport, Saratoga County (5B2). The note refers to the CTAF (Unicom) frequency, which is not attended 24 hours a day. When it is attended, the altimeter setting transmitted by the Unicom operator is obtained from the AWOS monitor screen. Does the note as presently written mean that if the Unicom is unattended, the altimeter setting broadcast by the AWOS itself cannot be used? Why doesn't the note read: "Use local altimeter setting on CTAF/AWOS, when not available (or "if not received") use Albany." ?

Is there some criteria being applied that prevents the use of consistent language with regard to using the AWOS as an altimeter setting source?

Thomas E. Miller
Ballston Spa, NY

When available, the direct broadcast AWOS/ASOS automated reporting services are the preferred method of determining the altimeter setting for an airport without ATIS service. The "when available" only means that there may be circumstances when the AWOS/ASOS altimeter setting may not be available. For example, the ground-based altimeter sensor may have a malfunction, there may be a ground radio failure, or the airborne radio may not operate on 25 KHz spacing. Please note: it is critical that you copy the current appropriate time or day-time group broadcasted with an automated weather report. The current time or day-time group verifies the unit is transmitting the latest data.

The differences between various approach plates is because the respective charts are designed by specialists in each FAA region based upon local needs, procedures, and customs.

The bottom line is a commissioned National Weather Service or FAA operated and maintained automated observing system (AWOS or ASOS) is an approved source of weather information. Commissioned non-federal systems operated and maintained in accordance with Advisory Circular (AC) 150-5220/16 are also approved sources.

A full ASOS system is normally approved for all operators. Since there are various types of AWOS systems, certain operators, such as a FAR Part 121 air carrier operator, may or may not be allowed to use a particular airport with a limited AWOS. In such cases, the operator needs an approved alternate altimeter reporting method and the airport may not be approved as an alternate airport for that operator. Operators, such as FAR Part 135 and Part 121, will have these restrictions listed in their respective operations specifications.

Pilots operating under FAR Part 91 normally have full use of all such systems. Pilots should always check in the current edition of their respective Airport/Facility Directory for the latest listings of airports with AWOS/ASOS facilities and designated frequencies.

FAA Order 8000.69 dated March 23, 1989, Automated Weather Observing Systems (AWOS) Applicability to FAR Parts 121 and 135 Flight Operations, defines the various AWOS systems and their respective limitations.

The Aeronautical Information Manual (AIM) has detailed information on AWOS and ASOS, their formats, and their operating procedures.

FAA AVIATION NEWS welcomes comments. We may edit letters for style and/or length. If we have more than one letter on the same topic, we will select one representative letter to publish. Because of our publishing schedules, responses may not appear for several issues. We do not print anonymous letters, but we do withhold names or send personal replies upon request. Readers are reminded that questions dealing with immediate FAA operational issues should be referred to their local Flight Standards District Office or Air Traffic facility. Send letters to FORUM Editor, FAA AVIATION NEWS, AFS-810, 800 Independence Ave., SW, Washington, DC 20591, or FAX them to (202) 267-9463. INTERNET address: Dean.Chamberlain@faa.dot.gov

• Night Flight Experience

I can't believe it is a typo, and I can't believe I read it in the *FAA Aviation News* that night time is that time between official sunset and sunrise (November-December 1996, page 10). I suggest that you look up the definition of night time in FAR Part 1 and in the Pilot/Controller Glossary. I've heard lots of instructors say the same thing, but in my 40 years of flying its never been that in the FAR.

Bob Plumb
Trinity Center, CA

You're right about the FAR 1 definition. It states, "Night means the time between the end of evening civil twilight and the beginning of morning civil twilight, as published in the American Air Almanac, converted to local time." This is the time to use for logging night flight time.

But, FAR § 61.57(d) states, "Night experience. Except as provided by paragraph (f) of this section, no person may act as pilot in command of an aircraft carrying passengers during the period beginning 1 hour after sunset and ending 1 hour before sunrise (as published in the American Air Almanac) unless, within the preceding 90 days, that person has made at least three takeoffs and three landings to a full stop during that period in the category and class of aircraft to be used."

We tend to use the two terms interchangeably, but they are not the same.

The Air Almanac, a joint publication of the United States Naval Observatory and the United Kingdom's H.M. Nautical Almanac Office, Royal Greenwich Observatory, provides the annual star data needed for air celestial navigation. The Air Almanac also contains the times for sun risings and settings as well as morning and evening civil twilight (sun 6 degrees below the horizon) for latitudes N 72 degrees to S 60 degrees. For high latitudes, the sun or moon may be above or below the horizon continuously at certain times of the year. The Air Almanac also provides extensive details on the common stars used for navigation as well as detailed charts and graphs of the stars, the moon, and the sun.

Please note: There is a difference between the times of the sun rising or setting and morning civil twilight and evening civil twilight. This difference could be important in logging night time to meet night experience requirement of the FAR and for being current as PIC, especially in the event of an accident or incident while carrying passengers.

Finally, it is important to use the current year almanac when determining whether the time logged is appropriate as night experience under the FAR.

• New ATP Cross-Country Requirement Coming

Recently, several readers, including a few FAA inspectors, wrote us asking about our many responses in past issues about how commercial pilots are to log cross-country flight time needed for an ATP certificate. Each time, *FAA Aviation News* responded with the FAA's policy that required a landing at a point other than the point of departure for civilian pilots to log the flight as a cross-country flight. The policy did not require any minimum distance, just a landing at a point other than the point of departure. FAA had exempted certain military flights from the landing requirement in recognition of some of the unique operational missions of the military. Needless to say, Civil Air Patrol pilots flying a complex five or six hour search procedure and pipeline, forest patrol, and glider pilots flying long flights without a landing did not like the landing requirement for obvious reasons. Under the current policy, they could not log the flight time as a cross-country flight to meet ATP certificate requirements even though they may have flown several hundred miles using cross-country flight techniques.

On August 4, 1997, the rule will change. The new FAR Part 61 which becomes effective on that date, states, in § 61.1(b)(3)(iv), "For a commercial pilot, airline transport pilot, or a military pilot who is qualified for a commercial pilot certificate under § 61.73 of this part, cross-country time includes a flight that is at least a straight-line distance of more than 50 nautical miles from the original point of departure and uses dead reckoning, pilotage, electronic navigation aids, radio aids, or other navigation systems."

The new rule, once it becomes effective, should answer everyone's questions about how to meet the ATP certificate cross-country flight time requirement. No landing at a point other than the point of departure will then be required. Although the new rule removes the landing requirement, it does add the distance specification which before had not been specified.

Pilots should continue to use the current policy on logging requirements until August 4, when the new rule becomes effective.

HOMEBUILT/ULTRALIGHT SAFETY INTERNET SITE

If you need information on homebuilt aircraft or ultralight vehicles, please tap your computer's keyboard. Thanks to the Experimental Aircraft Association (EAA)—the sport aviation association located in Oshkosh, Wisconsin—a World Wide Web site now is available for pilots and aircraft builders interested in accessing valuable maintenance, safety, and regulatory information.

Available 24 hours a day, the web site (www.safetydata.com) offers a wide range of topics, including accident/incident reports, airworthiness directives, advisory circulars, maintenance and manufacturer alerts, safety tips, aviation regulations and proposals of interest, and much more.

Users will be pleased to find that the safety data web site also links to EAA's other World Wide Web sites, including the EAA Home Page (www.eaa.org), the EAA Fly-In Convention page (www.fly-in.org), and the Home Page for the National Association of Flight Instructors (www.nafi.org). However, other detailed information eventually will be available to EAA members only, who will access it by entering their names, personal passwords, and membership numbers.

The site is being developed by former FAA'er Ben Morrow, in cooperation with EAA, and will serve as a one-stop place for aviation enthusiasts to get the valuable information they need. Morrow, a member of the EAA Ultralight Council, retired from FAA this past January. While at the agency, Morrow had responsibility for the maintenance of FAA's ultralight and amateur-built safety bulletin board.

IMPROPER USE OF CARB HEAT

A recent accident involving an instructor and student practicing simulated emergency landings may have resulted from improper use of carburetor heat. As a result of the accident and a review of similar accidents, the FAA asks all pilots simulating emergency landings to review and follow their respective manufacturer's operating instructions. For example, some aircraft require the use of carburetor heat before power is reduced. Other aircraft may require periodic application of power during a long glide and descent to "clear" the engine. The key is knowing the proper procedure for your aircraft.

Because of the possibility that a simulated engine failure may result in an actual engine failure, instructors, students, and pilots should not practice simulated engine failures over unfavorable terrain where they could not make an off-field landing if the engine fails to respond when needed. Don't set yourself up for a preventable accident.

KNOCK, KNOCK

Here's an interesting item from a recent issue of the Aviation Safety Reporting System's *Callback*. Read the beginning like the time-worn "knock, knock" joke.

Who's there?

The Captain.

The Captain who?

The Captain who wants to get back into the cockpit!

"I left the cockpit for a minute and on trying to re-enter, I found the doorknob to be completely freewheeling, with or without a key. The door simply could not be opened from either side. The Flight Engineer attempted to kick open the door, but to no avail. For almost an hour, until just prior to landing, several passengers and I were engaged in attempting to open the door with everything available to us—pocket knives, nail files, small screwdrivers. The alternative was to have the FE use the fire axe to chop down the entire door, causing potential panic to many of our passengers. In light of the heavy experience of both the co-pilot and the flight engineer, I elected to leave the door intact. A safe landing was accomplished with two well-qualified crew members at the controls."

The reporter doesn't say how the co-pilot and the flight engineer ever escaped from the flight deck.

"GLASPHALT" TO PAVE MISSOURI RUNWAY

You know how you wince when you pull into a parking space littered with broken glass that you didn't see until too late? Hold on 'cause you may be landing on it.

Actually, you'd be landing on recycled waste glass if you land at Rolla, MO. The University of Missouri-Rolla invented "glasphalt" 30 years ago as an alternative to paving roads and parking lots. As of early November, "glasphalt" was used for the first time on a 3,000-foot runway and a taxiway at Rolla Downtown Airport. Waste glass is substituted for some rock and sand used in the usual asphalt paving.

The runway was paved with four inches of "glasphalt" then painted with a paint which also contained waste glass as part of the pigment. Four hundred fifty tons of waste glass was crushed to one-quarter inch or smaller. The "glasphalt" doesn't require any special equipment and can be produced in commercial asphalt plants. It is placed using the same paving equipment as for asphalt.

Tests on "glasphalt" used in road paving in Baltimore, MD showed a higher reflectivity. The theory is that a "glasphalt" runway might reflect an aircraft's landing light and be more visible at night. Also, "glasphalt" apparently has a tendency to dry faster after rain than asphalt, and that will be measured during the evaluation at Rolla.

Another purpose of the project is to demonstrate how some of the nearly 10 million tons of waste glass each year could be reused. Waste glass cannot be recycled into other glass products, but "glasphalt" keeps it out of landfills.

For further information, please contact Dick Hatfield of the University of Missouri-Rolla at (573) 341-4328.

HISTORY REPEATING ITSELF

While reviewing the latest issue of *GASIL*, 1 of 1997, the *General Aviation Safety Information Leaflet* of the Civil Aviation Authority (CAA) of the United Kingdom, the CAA reported that in 1996 there were two midair fatal accidents among its fatal accidents. In one case, the two aircraft reportedly flew on a steady course into each other. GASIL reported this accident was similar to one on April 23, 1943, where two non-radio *Mosquitos* on test flights flew steadily towards each other and collided. According to witnesses on the ground who watched the impending accident take place, at the last second one of the *Mosquitos* tried to avoid the accident, but it was too late. All four occupants of the two aircraft were killed, including the youngest son of pioneer aviator Geoffrey de Havilland.

The two reports show that although more than 50 years have elapsed between the two accidents, the risk of a midair continues to this day.

GASIL listed the following safety points from one of its safety publications that might help everyone avoid a similar midair accident. *FAA Aviation News* believes the safety suggestions are as applicable to U.S. pilots as they are to U.K. pilots. (Note in some cases, we used the American spelling or term.)

1. If you need glasses, carry them, plus a spare pair.
2. Clean the windshield and side windows (if either is badly scratched, have new fitted).
3. If you are short or the aircraft has a high coaming, use a cushion.
4. Beware of blind spots, move your head or maneuver the aircraft.
5. Spend the minimum time with your head down checking the charts, (or GPS), changing radio frequencies, etc.
6. The aircraft with little or no relative motion is the one which is hard to see, and the most hazardous.
7. Aircraft below you may blend into the background of buildings etc.
8. High intensity strobes can be useful, especially on dull days.
9. Use the radio to form a mental

HINSON TO CHAIR ASF BOARD OF VISITORS

AOPA PHOTO

Former FAA Administrator and newly named chair of the ASF's Board of Visitors David R. Hinson (left) and ASF Executive Director Bruce Landsberg (center) present a ceremonial gavel to outgoing Board of Visitors chair Najeeb E. Halaby (right).

In *FAA Aviation News'* exclusive interview with former FAA Administrator David Hinson upon his departure from the FAA (Jan/Feb 1997), he indicated that after the winter holidays he would start "thinking about what I'm going to do." It seems that the call of aviation was too strong for Hinson to break that tie and that he has, indeed, found something to do.

The AOPA Air Safety Foundation (ASF) announced in late April that Hinson had been named chair of its Board of Visitors. The Board of Visitors consists of distinguished aviators or aviation professionals who volunteer their time and advice to the ASF's mission of aviation safety. Said ASF Executive Director Bruce Landsberg, "David Hinson will bring a unique perspective to ASF. He's experienced all facets of aviation as a pilot, teacher, and business executive. His most recent experience as head of FAA gives him a keen appreciation of the challenges facing the aviation industry."

Hinson succeeds another former FAA Administrator, Najeeb E. Halaby, as the ASF Board of Visitors chair.

picture of what is going on. Don't rely solely on it; someone could be NON-RADIO; e.g. a glider.

10. Develop and use an effective scan pattern.

11. Don't move the eyes continuously; stop and give them a chance to SEE.

12. The external scan should take considerably longer than your instrument scan.

13. When you have spotted another aircraft, do not fix on it and forget the rest of the surroundings or forget to fly your aircraft.

14. Use landing lights in the circuit (traffic pattern).

15. Encourage your passengers to assist in the look-out.

16. Report an AIRPROX (formerly Airmiss) (U.S. Near miss or near midair collision or NMAC).

17. On a sunny day, particularly when descending, glance below at the shadow of your aircraft on the ground. THERE SHOULD BE ONLY ONE.

GASIL also reported the CAA is testing a low-cost strobe detection system. It said, "The trial is progressing very satisfactorily and it has already prevented two encounters of the 'rather too close' kind but it does rely on all potentially conflicting aircraft being fitted with strobes. Thus the bottom line is MAINTAIN AN EFFECTIVE LOOKOUT."

Stay Alert—Stay Alive!

AEROBATIC RESTRICTIONS LIFTED ON GROB G.115

FAA has approved Service Bulletin 1078-66, dated February 10, 1997, as an alternative method compliance to overcome the restrictions in airworthiness directive (AD) 96-16-07, issued last September. The AD was issued after the crash of a Grob G.115D-1 during an aerobatic training flight last year. The investigation determined the probable cause as control surface flutter which led to an in-flight breakup.

Further investigation revealed that the aircraft had been repainted in an unauthorized paint shop where none of the movable control surfaces were removed for painting. As a result, the movable surfaces were not reweighed and rebalanced, as is required. Consequently, the new moments were not checked against approved limits nor was the empty weight recalculated. Also, the repaint job had not been properly signed off in the aircraft's logbook.

FAA and German experts (the Grob is a German import) discovered that the increased mass and residual moment of the repainted rudder could induce flutter and determined that this was most certainly the cause of the accident. No other technical problem or other structural integrity problem was found to be a contributing factor.

The recently issued service bulletin requires a small additional mass balance to be installed in the rudder and elevator to provide an extra margin of safety. After this alteration, all aerobatic Grob G.115C and D models may resume aerobatic maneuvers.

Homebuilt Sets NewAltitude Record

A Long EZ climbed to 35,027' in early May in Minden, NV, setting a new world altitude record for its class.

Jim Price, who spent 11 years - about 4,000 hours - building his aircraft, maintained the altitude for the required 90 seconds to beat the old record of 33,461'.

Minden had a vertical VFR corridor that facilitated high altitude flying. Price's aircraft is equipped for long distance travel with IFR, fuel flow, auto pilot, dual electronic ignition, and GPS.

The Long EZ was ready in 1994, but not quite ready for a record. To qualify in the C-1A weight category, Jim removed 48 pounds of equipment from the aircraft and went on a diet to lose 30 pounds. The final challenge came on ascension: flying with a partial panel, staying within boundaries after the canopy frosted, and monitoring systems constantly.

This issue's back cover photo depicts high flying pilot Jim Price as he sets the new record. He's maneuvering his Vortex Generator equipped Long EZ.

Editor's Runway

from the pen of Phyllis-Anne Duncan

STORMY WEATHER—AGAIN?

There are only so many ways to write about thunderstorms and their associated severe weather hazards, and coming up with a unique, timely, and interesting article on the same subject year after year is a challenge. Last year in the July/August issue we published a lengthy article on thunderstorms, which covered hail, lightning, tornadoes, turbulence, etc., in great detail. Rather than subject you to my tired words rewritten, we'd like to suggest that you review the July/August 1996 issue and re-read the article "Feather Canyons." If you do not have a copy of that issue, please contact me, and I'll send you a copy of the article. Unfortunately, the supply of that issue is low, but the copy machine works very well; and I'll assure you of a good quality photocopy.

Let it suffice to say that the winds, precipitation, lowered ceilings and visibility, and so forth connected with thunderstorms this time of year are airplane wreckers, so a review of thunderstorm avoidance is essential before the "heavy" weather season hits. Please make sure your weather forecasts and reports are current and plan your flight well. Make sure you understand the workings and limitations of your aircraft's weather radar or lightning detection equipment, if installed. Finally, appreciate the natural beauty of a t-storm from afar or, preferably, from the ground. We want you to be around to read our tired, old words about winter flying coming up a couple of issues from this one.

STRUCTURAL FAILURE

NASA's Aviation Safety Reporting System (ASRS) recently passed along one of their "FYI" bulletins to FAA's Aviation Safety Program for dissemination. For those of you not familiar with ASRS, it is an anonymous reporting system for collection of data from pilots, air traffic controllers, mechanics, flight attendants, and others involved in aviation operations. After an incident, you can submit one of the forms to ASRS, your information (de-identified) goes into their database for analysis, and FAA can take no enforcement action, if applicable, against you based on the ASRS report. (If we discover an act of non-compliance from some other source of information, enforcement action can proceed.) This is an excellent way of obtaining safety information directly from those involved fairly soon after an incident occurs. ASRS uses the information collected to develop very interesting articles for its publications, "Callback" and "Directline." For further information, contact ASRS at (415) 969-3969 or visit their website at http://olias.arc.nasa.gov/asrs . The push has been on to get more general aviation information in the database, so, please, when something occurs that taught you a safety lesson, pass it along to ASRS so that others won't have to learn the hard way.

But I digress. The item sent us by ASRS concerned the pilot of a Questair *Venture*, which experienced structural failure in flight after the pilot executed an emergency evasive maneuver. After seeing another aircraft on a collision course, the *Venture* pilot reported that, "...I made an evasive pull up to avoid collision. Both wings of my aircraft suffered major bending and landing gear up locks failed and main gear fell out of wells..." The *Venture* is an all-metal aircraft with a limit load factor of six positive G's. The pilot estimated the maneuver executed reached 10 G's. Apparently, the pilot was able to land safely and tell the tale, since he or she reported the incident to ASRS.

This incident fits in with the four-part series on operations at non-towered airports, which we concluded with this issue. Was the pilot using an effective scan? If so, why was such a drastic maneuver necessary? Was he or she distracted by some other event or cockpit duty that interrupted the scan? What is the physical configuration and built-in obstructions to vision in the *Venture*'s cockpit? Regardless of the answers to these questions, a pilot reacted to an emergency and avoided a mid-air collision. Some might quibble that the airplane was bent, but I'd rather pay to fix an airplane damaged in an evasive maneuver than suffer the alternative.

According to the ASRS report, the *Venture* pilot was apparently disappointed that the six-G aircraft was damaged in a 10-G maneuver; the pilot has been "in contact with the manufacturer regarding the incident."

IN UPCOMING ISSUES...

...An exclusive interview with Secretary of Transportation Rodney Slater on the new FAA Administrator, safety issues facing the FAA in the near future, and FAA's future role in aviation.

...What to do about disruptive passengers. Incidents of interference with flight and cabin crewmembers are on the rise. We'll discuss the FAA's "zero tolerance" challenge to the airlines.

...A "Flying in Hawaii" issue; our "Flying to Alaska" issue was very popular, and apparently the 49th and 50th states have a little aviation safety rivalry going on. The "Hawaii" issue will cover considerations for flying in and among the Hawaiian islands; e.g., density altitude, mountainous terrain, volcanic ash, rapid weather changes, and overwater operations.

...FAA's plan for recognizing and dealing with in-flight icing. The plan is based on recommendations from more than 300 international aviation experts and calls for improvements in in-flight icing detection and forecasting. Changes to training and certification requirements are also part of the plan. Our article will highlight the 13 major tasks outlined in the plan.

'Til next time...

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